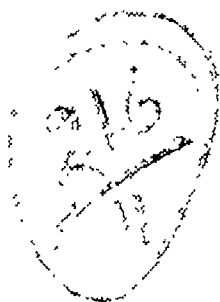


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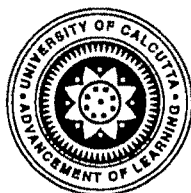
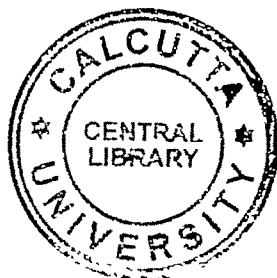
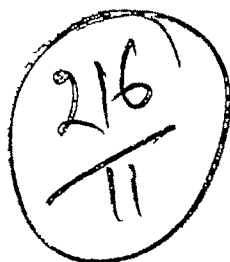
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UNIVERSITY OF CALCUTTA**

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INTRODUCTION

At the outset the members of the Editorial Board of the Calcutta University Journal of Information Studies (CUJIS) (Journal of the Department of Library and Information Science) convey their gratefulness and thanks to the authorities of the University of Calcutta to allow the publication of the Journal CUJIS Vol. 15 and the continuous encouragement and cooperation they provide.

On behalf of the Editorial Board we should convey our thanks to the authors who have contributed their papers for this publication of CUJIS Vol. 15. At the same time we feel sorry for them whose papers have not been included in this volume. A list of contributors along with their affiliation has been incorporated at the end of the volume instead of placing the authors in the footnote area of each paper.

As the CUJIS is published annually we should mention the happenings of the Department during the year. A number of achievements were there and to mention a few we have to talk first about the long standing selection of three teaching posts and their joinings as faculty member for the strength of the Department. Dr. Sabuj Kumar Chowdhury, Dr. Puballika Bhattacharya Maltra and Dr. Susmita Chkarborty have joined the Department as Assistant Professors in Library and Information Science. Indeed its a great pleasure and relief to all of us in the Department.

10th Refresher Course was conducted by Dr. Dibyendu Paul and Dr. Arabinda Malty jointly on the topic entitled "Academic Library Management: infinite possibilities" in the Department on September 06-27, 2013.

A number of research scholars have joined the Department as UGC JRF, Rajiv Gandhi Scholar and URF and they are Soumen Kayal, Moumita Saha, Rosalnn Rout, Mayukh Biswas, Subrata Saha. Abhijit Chatterjee and Goutam Dutta are working as URF. The M.Phil students are also getting non-NET fellowship for pursuing their research in M.Phil level. One student named Gita Sarkar has got Rajib Gandhi fellowship for pursuing M.Phil Dissertation.

Prabir Roychaudhury–Amita Roychaudhury Memorial Lecture was held on 13.03.2013 and Professor C R Karisiddappa delivered lecture on the topic entitled "Envisioning future of LIS education in India: new vistas towards its sustenance".

It is the first time in the Department that a Memo of Understanding would be signed between the two Universities (University of Calcutta and the University of Wisconsin Milwaukee) so the faculties and students ex-change programme and the research Initiatives between the two Universities will be possible. Both the teachers and the students will get benefit from such MoU.

A proposal for a National Seminar (UGC Sponsored) on "Career in LIS: Challenges and opportunities" was accepted by the authority. Sri Parikshit Mondal and Dr. Susmita Chakraborty were assigned to act as joint secretaries and to do the necessary preparatory works. The date of Seminar has been fixed on 22.03.2014.

A proposal was sent to UGC-ASC for Short Term Course on "Information Management and Research Methodology" which will be held in the 1st part of the next year. Dr. Dibyendu Paul and Dr. Sabuj Kumar Choudhury have been assigned to act as joint coordinator.

Another proposal for Introducing the Voice and Communication (VAC) Proficiency Course for the students of the Department will be materialized & effective very soon. Dr. Pubalika Bhattacharyya Maltra has been assigned to explore the necessary modalities for running such VAC Course.

Biplab Chakrabarti
Hony. Executive Editor

A STUDY ON THE CONTRIBUTIONS OF RAJA RAJENDRALAL MITRA, THE LIBRARIAN OF THE ASIATIC SOCIETY TOWARDS THE DEVELOPMENT OF LIBRARY SERVICES

NIVEDITA BHATTACHARYA SAHU AND BIPLAB CHAKRABARTI

Abstract:- Raja Rajendralal Mitra was a scholar librarian mentioned at various places as indologist, archaeologist, historian, litterateur, Sanskrit scholar etc. A librarian with so many abilities was never identified before. This study focuses on Raja Rajendralal Mitra, the scholar librarian and first Indian President of the Asiatic Society and his contributions to the field of library services. In this article mainly the literary works of Mitra dealing with the field of library services are taken into consideration.

Keywords : Raja Rajendralal Mitra, Asiatic Society, Library Services

Introduction

One of the makers of the **Bengal Renaissance**, the first Bengali to learn and cultivate with distinction the newly emerging science of archaeology, and one of the first few Indians who realized the importance of science and technology in the progress of people was Rajendralal Mitra, born on February 16, 1822 in a respectable Kayastha family at Soora, an eastern suburb of Calcutta. He was the third son of his father Janmejaya Mitra, a well-known scholar of Persian and Sanskrit and composed huge number of books in Bengali (Bandyopadhyay, 1944, p. 5).

On November 5 1846, Rajendralal was appointed Librarian and Assistant Secretary of the Asiatic Society at a monthly salary of rupees hundred. He was appointed on probation for six months and was required to attend the library daily from 10 a.m. to 4 p.m. It was also stated to him that in his capacity as Assistant Secretary he had to correct all proofs and prepare all routine letters for the Secretary's office. The fact of his getting such an appointment is evidence that the Governors of the Society, who were themselves, distinguished scholars, had a high appreciation of the abilities and erudition of the young scholar. He held this appointment for about ten years, and during this time he enriched his mind by the accumulation of an immense mass of varied knowledge. The years in the Asiatic Society were fruitful during the career of Rajendralal. Here in this learned institution, he came in contact with a number of scholars. The valuable collection of books and manuscripts of the Society also gave him an impetus and substantial help to build up his scholarly career. By laborious study he soon acquired a taste for antiquarian research and began to contribute and fill the pages of the Society's journal. Altogether he contributed nearly 114 papers to the Journal of the Asiatic Society of Bengal, every one of which has been admired by European and Indian scholars (Kapoor, 2002, pp. 4867-4868). His first article was published in the January issue of the *Journal of the Asiatic Society* in 1848 i.e. Inscription from the Vijaya Mandir, Udayapur, & c. (Vol. xvii, pt. i. 68-72). With this he emerged

as a learned writer. It was to this *Journal* that Rajendralal subsequently contributed numerous articles on a variety of subjects- Epigraphy, Numismatics, Literature, Philology and so on (Dasgupta, 1976, p. 18). He was the teacher of *punthi*-learning of Rabindranath Tagore. In 1885, he became the First Indian President of the Asiatic Society, an institution where Indians were even prevented entry during the initial years. This present study however concentrates only on his contributions towards the development of library services.

Objectives of the Study

The objectives of the study are as follows:

- 1) to identify the contributions of Raja Rajendralal Mitra as librarian of the Asiatic Society;
- 2) to infer that Raja Rajendralal Mitra was in fact very efficient and intellectual librarian of his time to disseminate education and research;
- 3) to establish the fact that librarianship may flourish as one of the most important professions in the society for the development of education and research.

Importance of the study

- 1) This study aids in the appraisal of librarianship as a profession from the good old days.
- 2) This study helps to know about an eminent personality who started his career as a librarian and later became famous as archaeologist, indologist, historian and literature scholar.
- 3) This study helps to improve the social status of librarians among other professionals, as scholar like Rajendralal Mitra who was a famous figure in diverse fields, was librarian.

Review of related literatures

Bandyopadhyay (1944) discussed about the genealogy of Rajendralal, his childhood, education, marriage, his appointment and association with the Asiatic Society of Bengal, his presence in the editorial board of *Tattwabodhini Patrika*, *Vividhartha-sangraha*, *Rahasya-sandarbha*, and provided a long list of his written and edited volumes both in English and Bengali, enlisted some letters written and received by him and the honors which he received for his scholarship. He also emphasized on the philanthropic nature of Rajendralal and his connections with politics.

Roy (1969), an erudite scholar in his book *Rajendralal Mitra* emphasized on Rajendralal's life, his childhood, education, professional expertise, his close association with different institutions and seats of learning, editorial connections with many important journals of that period. He had vividly described Rajendralal's expertise in Indology, History, Linguistics, Sanskrit language and literature, Bengali language and literature. He had also given an elaborate list of works on and by Rajendralal Mitra.

Fergusson (1974) refuted the observations made by Rajendralal Mitra in

the Antiquities of Orissa published in 1876-1880 and the Buddha Gaya 'The Hermitage of Sakya Muni' published in 1878. He questioned whether the natives of India should be treated as equal to Europeans in all respects. However he praised Mitra for raising his curiosity.

Dasgupta (1976) concentrated on Mitra as an historian. He drew the attention on many important works of Rajendralal. He said about the intellect of Rajendralal as a pioneer historian. Thus he explained the fact that Rajendralal though a professional librarian at Asiatic Society was engaged in lots of other scholarly works.

The Asiatic Society (1978) mentioned about Mitra's contribution as a National leader, in Geography and technical sciences, languages and literature. Thus his multi-disciplinary scholarship made him famous throughout the world.

Sinha (1991) described Rajendralal as the promoter of the vernacular and awakener of political consciousness. He also focused Rajendralal as the denouncer of indigo planters. His vision of unity was enlightened in the article. Rajendralal was also shown as a pre-eminent Orientalist who had a great grasp of public questions.

Islam (n.d.) illustrated Rajendralal's life, career and works in an elaborate way. It focused on his association with Asiatic Society and enlisted his works. His association with the different societies and institutions were also well noted. In a nutshell it provided a summarized description of Rajendralal's life.

Goswami (2009) stated in his article that Rajendralal was the manuscript or *punthi* learning teacher of Rabindranath Tagore. Tagore was much inspired by Mitra's edited book 'The Sanskrit Buddhist literature of Nepal'. He invariably carried the book during his travels on the broad expanse of the river Padmā. A number of marvelous literary works by Rabindranath like *Malini*, *Raja*, *Arupratan*, *Natir Puja*, *Sapmochan*, *Chandālikā*, *Pūjārīnī* etc were adapted from Rajendralal's English translations of the Sanskrit Buddhist manuscripts—*Avadāna Sataka*, *Mahāvastu Avadāna*, *Divyāvadānamālā* and others. The story elements were taken from Rajendralal's work with slight modifications.

Methodology

The data was collected from the documentary sources. The primary documentary sources include literary works of Raja Rajendralal Mitra and from his works data were collected to identify his contribution in the field of library services. A visit to the important institutions and libraries like National Library of India; The Asiatic Society, Kolkata; Bangiya Sahitya Parishad, Kolkata; and the University of Calcutta have been made to collect information from documentary sources.

Findings

Rajendralal Mitra made marvellous and magnificent contributions to Bengali literature, Sanskrit literature, Indology, History, Indian archaeology, art and architecture etc. His contributions as a librarian were remarkable. He prepared several descriptive catalogues which shows his flair for librarianship. This study

is an effort to identify his contributions to the field of library services. His literary works are mainly taken into consideration for the purpose. The works whose physical presence found from different libraries are interpreted in greater details. Rest others are only mentioned under the respective headings with the title of the work.

- 1) **A Descriptive catalogue of curiosities in the museum of the Asiatic Society of Bengal, 1849** (Dasgupta, 1976, p. 55)
- 2) **A catalogue of books and maps in the library of the Asiatic Society of Bengal, 1856** (Dasgupta, 1976, p. 55)
- 3) **Index to Volumes I to XXIV of the Journal of the Asiatic Society, 1856** (Dasgupta, 1976, p. 55)
- 4) **Notices of Sanskrit manuscripts, Vols. 1 to 9 and Part I of Vol. 10 published between 1871 and 1890** (Dasgupta, 1976, p. 55)

These were the inventories prepared for the Asiatic Society. The descriptions given were full, and the contents of most of the works have been given in such a way as to obviate the necessity of a future more detailed analysis. The notices contained the name of the author of the manuscript, description of the place from where it was found, the beginning sentences and the ending sentences. He also tried to give a brief description of the manuscripts in English and Sanskrit by mentioning their subjects. As the manuscripts were discovered during different periods of time and notices were given accordingly, therefore, at the end a subject index was prepared in English. The first volume contained nineteen subjects like Vedas (with sub-divisions), History, Puranas, Poetry, Dictionary, Grammar,

- 5) **Catalogue of Sanskrit manuscripts existing in Oudh, 1873-78** (Dasgupta, 1976, p. 55)
- 6) **A Report on Sanskrit manuscripts in native libraries in Bengal, 1875** (Dasgupta, 1976, p. 55)
- 7) **A Descriptive catalogue of Sanskrit manuscripts in the library of Asiatic Society of Bengal. Part I: Grammar** (Mitra, 1877)

The greater part of the manuscripts owned by the Asiatic Society was collected by the authorities of the late College of Fort William. But when the college was abolished in 1836, the manuscripts were made over to the Asiatic Society, and they formed the nucleus of the Society's Sanskrit Library. In 1870, when Rajendralal Mitra undertook to compile, for the Government of Bengal, notices of Sanskrit manuscripts extant in private libraries in the provinces comprised in the Lieutenant Governorship of Bengal, Mr. Grote, though he had then finally retired from India, urged him once again to do something for the Society's collection. At the suggestion of Rajendralal, Pundit Premchand Chaudhuri was employed to prepare a descriptive catalogue in Sanskrit, from which it was expected, either the librarian, or one of the members, would be able easily to compile an English version. Later Rajendralal edited the descriptive catalogues prepared by the Pundit and it was published in book-form in 1877. The

translation of the Sanskrit works into English and its depiction in the form of catalogue entries was done by Rajendralal. An appendix was added which contained the list of Sanskrit grammars known to exist. This again showed his expertise as a librarian.

- 8) **Report on the operations carried on to the close of the official year 1879-80 for the discovery and preservation of ancient Sanskrit manuscripts in the Bengal provinces, 1880** (Dasgupta, 1976, p. 55)
- 9) **A Descriptive catalogue of Sanskrit manuscripts in the library of His Highness the Maharaja of Bikaner, 1880** (Dasgupta, 1976, p. 55)

The catalogues that he prepared showed his expertise in the field of library services. It is indeed a matter of excellence that a person like him being an important functionary of the Asiatic Society dedicated himself so much in the preparation of the catalogues. This proved his ability as a librarian.

- 10) **The Sanskrit Buddhist Literature of Nepal, 1882 (originally named catalogue of Nepalese Sanskrit Manuscripts or Buddhist Literature of Nepal)** (Mitra, 1882/ 1971)

The Sanskrit Buddhist literature of Nepal was perhaps the highest achievement of Hindu scholarship in that century. It threw a flood of light on the contribution of Nepal to Sanskrit literature. Ever since the time of its first publication, the book had been extensively used as a book of sources and materials in India, Europe and America. Rabindranath Tagore was very fond of this book and invariably carried it during his travels. He lured from it useable raw-materials for a number of poems and plays. At least for eight poems of *Kathā* (1900) the source-materials have been gleaned from Rajendralal's book was mentioned in the introductory notices of the poetical collection. The poet made certain modifications of the original source; but these were slight and therefore, justified by poetic law. In *Kathā* the story elements of the following poems were taken from the Sanskrit Buddhist Literature of Nepal: 'Sreṣṭha Viksā' (*Avadāna Sataka*, No. 55, p. 33), 'Pūjārini' (*Avadāna Sataka*, No. 54, p. 33), 'Mūlya Prāpti' (*Avadāna Sataka*, No. 6, p. 20), 'Mastaka Vikraya' (*Mahāvastu Avadāna*, pp. 153-154), 'Parisodh' (*Mahāvastu Avadāna*, p. 31), 'Avisār' (*Bodhisattvāvadāna Kalpalatā*, No. 72, p. 66), 'Samānya Kshati' (*Divyāvadānamālā*, No. 10, p. 311), 'Nagar Lakshmi' (*Kalpadrūmāvadāna*, No. 16, p. 296-297). The poems 'Pūjārini' and 'Parisodh' were later transformed into two dance-dramas, *Natir-pūjā* (1926) and *Syāmā* (1939) respectively. Tagore's princess *Mālinī* was a character from *Mahāvastu Avadāna* (p. 118); he made her a heroine of his play titled *Mālinī* (1896). The sources of *Rājā* (1910), *Arūpratan* (1920) and *Sapmochan* (1931) can be also traced to *Mahāvastu Avadāna* and *Kuśa Jataka* (p. 108). Some of the characters of *Achalayātana* (1911) were adapted from *Panchaka Avadāna* (pp. 309-312). The Buddhist Mantras used in the play were also to be found in the Sanskrit Buddhist Literature of Nepal. Tagore wrote in the prefatory notes on *Chandālikā* (1933) that he had got the story from *Sārdūlakama Avadāna* (p. 219).

These were his contributions to the field of library services. All these works revealed his scholarship as a librarian. Preparation of the descriptive catalogues

has been a distinctive feature of the Asiatic Society which was initiated under his leadership.

Conclusion

Raja Rajendralal Mitra was an institution in himself. His innumerable works and the versatility of his genius eminently qualified him for the high post of the first Indian President of the Asiatic Society of Bengal in 1885. The honor given to him was a national honor, and all his countrymen rejoiced at this great mark of distinction which was conferred upon him. It must be remembered that he entered the Society as a librarian in 1846 and achieved the highest position in due course of time. It is indeed a matter of pride for the library professionals of all time that a man who was a librarian earned name and fame not only in India but also in the European nations even in those days when Indians were looked down by the Europeans. A man with so much of talent started his career as a librarian and reached heights thereafter by spreading education and devoting his time to research in diverse disciplines. That establishes the fact that librarianship can be one of the important professions for the development of education and research.

Suggestions

- The invaluable works of this learned scholar should be well preserved and those works should be made available to public.
- A digital archive should be prepared for his works as these are treated as rare documents and once lost these cannot be further retrieved.
- The institutions with which Raja Rajendralal Mitra was associated should focus him as librarian by organizing seminars, lecture talks, exhibitions of his works, publications related to his activities during librarianship.
- The life sketch and activities of Raja Rajendralal Mitra should be incorporated in the course curricula of Library and Information Science field.

References

- Bandyopadhyay, B. (1944). *Rajendralal Mitra*. Calcutta: Bangiya Sahitya Parishad.
- Bandyopadhyay, B. (1944). *Rajendralal Mitra* (p. 5). Calcutta: Bangiya Sahitya Parishad.
- Dasgupta, K. K. (1976). *Indian Historiography and Rajendralal Mitra* (p. 18). Calcutta: Satchidananda Prakashani.
- Dasgupta, K. K. (1976). *Indian historiography and Rajendralal Mitra* (p. 55). Calcutta: Satchidananda Prakashani.
- Fergusson, J. (1974). *Archaeology in India with especial reference to the works of Babu Rajendralal Mitra*. New Delhi: K.B.Publications.
- Goswami, K. (2009). Rabindranath punthicharcha o punthibhabna. In B.Roy, S. Bandyopadhyay & P. Ghosh (Comps.), *Ekaler prekshite rabindrasahitya path byaktijiban o srastajiban* (pp. 156-170). Kolkata: University of Calcutta.
- Islam, S. (n.d.). Rajendralal Mitra. *Banglapedia: Mitra, (Raja) Rajendralal*. Retrieved January 12, 2012, from www.banglapedia.org/httpdocs/HT/M_0277.H

Kapoor, S. (Ed.). (2002). *The Indian Encyclopaedia* (pp. 4867-4868). New Delhi: Cosmo Publications.

Mitra, R. (Ed.). (1877). *A descriptive catalogue of sanskrit manuscripts in the library of the Asiatic Society of Bengal: Part First- Grammar*. Calcutta: The Asiatic Society.

LIBRARY AND INFORMATION SCIENCE RESEARCH IN WEST BENGAL: A BIBLIOMETRIC STUDY

DHIMAN MONDAL AND ARABINDA MAITY

Abstract : The present bibliometric study shows the results of a survey of the doctoral theses awarded by various universities in West Bengal in the field of Library and Information Science (LIS) during 1979-2012. It aims to provide an insight in the trend of research work according to year, university, research guide, language and subject. A steady development has been observed till 2000 and since then the growth of LIS research is increasing significantly. Till now 120 LIS theses have produced by research scholars and the result shows that Jadavpur University outputted maximum theses in West Bengal. Furthermore, the subjects like information needs, information seeking behaviour and Information systems are the preferred subjects among the scholars.

Keywords : Ph.D. Theses, Library and Information Science, Research, West Bengal.

Introduction:

Research is the process of arriving at dependable solutions to problems through the systematic collection, analysis and explanation of data. It is carried out to develop and evaluate the concepts and theories of that particular field. Research in library and information science does not have a long history. The doctoral degrees in Library and Information Science in India started in early 1950s and now there are approximately 800+ Ph.D degree holders in LIS in the country (Gokhale, 2010). At present more than 100 universities are engaged in teaching LIS education and 53 universities are conducting research activities (Dhiman, 2011). LIS professionals in India have concentrated on conducting research work at doctoral level in order to develop a knowledge base for the profession. Factors like recognition, salary scale, UGC norms for career promotion etc. have been the motivating factors.

The present bibliometric study has undertaken to trace the development and analysis of LIS research at doctoral level in West Bengal. In West Bengal, 8 universities have Library and Information Science department. Out of them, six universities outputted 120 theses (Appendix) during 1979-2012. Remaining two universities (Netaji Subhas Open University & University of North Bengal) offer BLIS and MLIS course only.

History of LIS Research In India:

The history of Library and Information Science research in India is about five decades old. The University of Delhi awarded the first Doctoral Degree in librarianship in 1957 to D.B. Krishna Rao for his work on "Facet analysis and depth classification of Agriculture" under the guidance of Dr. S.R. Ranganathan. In 1954, Jagadish Saran Sharma, the first LIS professional got the abroad doctoral degree from Michigan University, USA for his thesis on "Mahatma Gandhi: A descriptive Bibliography".

Panjab University awarded the second doctoral degree in librarianship to

Pandey S.K. Sharma in 1977 for his work on "Expansion and Modification of D.D.C (18) for classifying Indological books with special reference to Indian Philosophy and Indian Religion" under the guidance of Dr. J.S. Sharma. Afterward, there is tremendous growth of research output in this field. Furthermore, the first D.Litt. in this subject was awarded by Utkal University, Orissa to Dr. B.B. Shukla in 1992 for his thesis, "The work and impact of a pioneer in LIS: A critical study of the work of Prof. P.N. Kaula".

Early LIS Research in West Bengal:

The University of Calcutta awarded the first doctoral degree in librarianship in 1979 to Tarun Kumar Mitra for his work on "Contribution of Rajsekhara to the development of subject classification". In 1980, the second doctoral degree was awarded by University of Calcutta to Indranaryan Sengupta for his thesis "Recent directions of growth of biomedical knowledge: an analytical study based on observed changes in the scientific impact of serial publications". So, the history of LIS research in West Bengal was started by the University of Calcutta.

During 1950s to 1980s, some doctorates degree on library related topics were earned by West Bengal library professionals under the guidance of faculties belonging to the social science disciplines and the like. They are:

- 1) Munindranath Basu: Museum method and the process of cleaning and preservation, Department of Science, University of Calcutta, Kolkata, 1950.
- 2) Bimal Kumar Datta: Libraries and Librarianship in ancient and medieval India; Department of History, University of Calcutta, Kolkata, 1963.
- 3) Bhubaneswar Chakrabarti: History of Malla dynasty of Bishnupur from earliest times to 1850 A.D., Department of History, University of Calcutta, Kolkata, 1976.
- 4) Pulinbihari Barua: Monastic libraries in Ancient India (as depicted in Buddhist and Jain texts), Department of Pali, University of Calcutta, Kolkata, 1983.

Review of Related Literatures:

Kumar and Raju N (2008) examined research productivity in LIS in India and found that 590 Ph.D. theses were produced during the study period. The subjects like Bibliometrics/Scientometrics/Informetrics analysis are the favourite research subjects among the professionals. Furthermore, Karnataka has the largest share compared to other states and West Bengal ranked 12th position with 17 Ph.D. theses.

Raju (2008) discussed that limited number of studies were made on the theoretical based topics like classification and cataloguing. He also suggested to identify the thrust areas of research and the research results should add some substance to the knowledge in the field.

Chandrashekara & Ramasesh (2009) stated that 802 Ph.D. theses were produced in the LIS subject during 1957-2008. West Bengal ranked 5th position among the Indian states. Besides, University of Burdwan and Jadavpur University

listed as 11th and 12th position respectively among the top Indian outputted universities.

Dhiman (2011) revealed in his study that total 208 Ph.D. theses were produced by LIS students during 2006-2010 in India. Among the Indian states, Madhya Pradesh contributed maximum theses and West Bengal had the 5th position with 13 theses.

Objectives of the Study:

The objectives of the study are:

- i. to know the growth and development of LIS research in West Bengal during 1979-2012,
- ii. to trace chronological distribution of Ph.D theses in LIS,
- iii. to examine the university wise productivity of Ph.D theses in LIS,
- iv. to identify leading supervisor who have guided more than 5 Ph.D theses in LIS,
- v. to find out language wise distribution of LIS theses,
- vi. to identify joint guideship of Ph.D theses and
- vii. to find out subject wise distribution of LIS theses.

Scope & Methodology:

The scope of the study is confined to the Ph.D. theses accepted by West Bengal Universities during 1979-2012 in the subject of Library and Information Science. The basic data provided in the article are collected from the central library of different universities of West Bengal. Consultation with the faculties of various LIS departments in W.B. has also been made for further clarification where needed.

The data obtained from the above sources were recorded separately and then used MS-Excel to organize, tabulate and analyze the necessary data for the study.

Data Presentation and Analysis:

The authors have tried to consolidate all the doctoral theses awarded by West Bengal universities and classified them to have a glimpse of the growth, trend and subject of the theses.

Growth Pattern of LIS theses:

Table 1 shows the growth of LIS Ph.D. theses in West Bengal. In total, 120 theses were produced by different West Bengal universities during 1979-2012. The productivity of LIS Ph. D theses were not very significant till 2000. Table 1 also shows that maximum i.e. 46 Ph.D. theses were awarded in 2006-2010, followed by 24 Ph.D. theses which were awarded in 2001-2005. It is evident that more than 60 percent of the Ph.D. theses were awarded during the last 12 years. So, the growth rate of research work is quite significant during the last decades.

Year	No. of Theses	Cumulative Theses	Percentage	Cumulative Percentage
1975-1980	2	2	1.66	1.66
1981-1985	1	3	0.83	2.49
1986-1990	2	5	1.66	4.15
1991-1995	17	22	14.16	18.31
1996-2000	10	32	8.33	26.64
2001-2005	24	56	20.00	46.64
2006-2010	46	102	38.33	85.00
2010-2012	18	120	15.00	100.00
TOTAL	120		100.00	

Table-1 : Growth Pattern of LIS Theses.

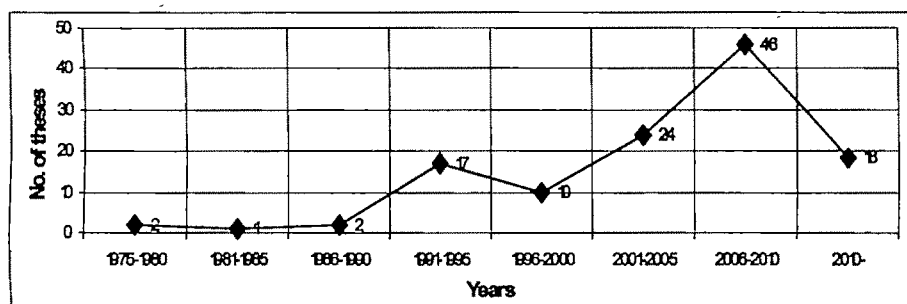


Figure 1: Growth Pattern of LIS Theses.

Year wise Distribution of Ph.D. Theses in LIS:

Table 2 represents the year wise distribution of theses output in LIS In West Bengal starting from the year 1979 to 2012. In 1979, the first Ph.D. thesis in LIS from West Bengal was awarded by University of Calcutta. In West Bengal, the research activity was quite rare till 2000. After that, there was sudden increase of research output in LIS. Highest number of Ph.D. theses were awarded in 2006 i.e. 12 (10%) followed by 2008 with 10 Ph. D. theses. In total, 120 Ph. D theses were awarded by West Bengal universities in last 34 years.

Year	JU	CU	KU	RBU	BU	VU	Total	Percentage
1979	-	1	-	-	-	-	1	0.83
1980	-	1	-	-	-	-	1	0.83
1984	-	-	-	-	1	-	1	0.83
1988	-	-	-	-	1	-	1	0.83

1990	-	-	-	-	1	-	1	0.83
1991	1	-	-	-	1	-	2	1.66
1992	1	-	-	-	3	-	4	3.33
1993	2	-	-	-	-	-	2	1.66
1994	-	-	-	-	1	-	1	0.83
1995	5	1	-	-	2	-	8	6.66
1996	-	1	-	-	-	2	3	2.50
1997	1	-	-	-	-	-	1	0.83
1998	1	1	-	-	-	1	3	2.50
1999	1	-	-	-	-	2	3	2.50
2000	-	-	-	-	-	-	-	0.00
2001	4	-	-	-	-	3	7	5.83
2002	4	1	-	-	-	-	5	4.16
2003	1	1	-	-	1	-	3	2.50
2004	-	2	-	-	1	-	3	2.50
2005	3	1	-	-	-	2	6	5.00
2006	4	2	-	1	2	3	12	10.00
2007	2	3	2	-	1	-	8	6.66
2008	3	-	1	1	2	3	10	8.33
2009	3	2	1	-	2	-	8	6.66
2010	1	2	1	-	2	2	8	6.66
2011	3	5	-	-	-	1	9	7.50
2012	2	-	-	1	6	-	9	7.50
TOTAL	42	24	5	3	27	19	120	100

JU= Jadavpur University; CU= University of Calcutta; KU= University of Kalyani; RBU= Rabindra Bharati University; BU= University of Burdwan; VU= Vidyasagar University.

Table-2 : Year wise distribution of Ph.D. Theses.

University wise Contribution of Ph.D. theses In LIS:

Table 3 presents the university-wise research output in LIS discipline. In West Bengal, 6 Universities are engaged in LIS research. Out of these, Jadavpur University leads the table with 42 Ph.D. theses (35%), followed by University of Burdwan with 27 Ph.D. theses (22.5%), University of Calcutta with 24 Ph.D. theses (20%) and Vidyasagar University with 19 theses (15.83%). The research productivity of University of Kalyani and Rabindra Bharati University in LIS is comparatively low. They have started their Ph.D.'s in LIS some years ago.

Sl. No.	University	No. of Ph.D.'s	Percentage
1.	Jadavpur University	42	35
2.	University of Burdwan	27	22.5
3.	University of Calcutta	24	20
4.	Vidyasagar University	19	15.83
5.	University of Kalyani	5	4.16
6.	Rabindra Bharati University	3	2.5
	TOTAL	120	100

Table-3 : University wise contribution of Ph.D. theses in LIS

Supervisor wise distribution of theses:

Table 4 reveals the list of leading research guides who have guided minimum 5 scholars successfully. Prof. Prabir Roy Choudhury of Jadavpur University had guided and supervised maximum 14 scholars followed by Prof. Biplab Chakrabarti of University of Calcutta and Prof. Pulin Behari Barua of University of Burdwan with 9 Ph.D. scholars each.

Sl. No.	Name of the Guides	Number of Ph.D.'s Guided
1.	Prof. Prabir Roy Choudhury	14
2.	Prof. Biplab Chakrabarti	9
3.	Prof. Pulin Behari Barua	9
4.	Prof. Subal Chandra Biswas	8
5.	Prof. Mukunda Lal Chakraborty	7
6.	Prof. Asok Basu	6
7.	Dr. Chaitali Dutta	6
8.	Prof. Juran Krishna Sarkhel	6
9.	Dr. Tridib Tripathi	6

Table-4 : List of supervisors who have guided minimum 5 Ph.D.'s.

Language wise distribution of Ph.D. theses in LIS:

Table 5 shows the language wise distribution of the Ph.D theses in LIS. It clearly shows that 14 Ph.D. theses (11.67%) are in Bengali language. Out of them, 8 Ph.D. theses were submitted in Jadavpur University and 3 theses were from University of Burdwan and Rabindra Bharati University each. Furthermore, majority of the Ph.D. theses (88.33%) are in English language. It indicates that regional language is not favourable for LIS research scholars in West Bengal.

Sl. No.	Language	No. of Ph.D. theses	Percentage	Distribution of Ph.D. theses
1.	Bengali	14	11.67	8 in JU, 3 in BU, 3 in RBU
2.	English	106	88.33	35 in JU, 24 in BU, 24 in CU, 19 in VU, 5 in KU.

Table-5 : Language wise distribution of Ph.D. theses.

List of Supervisors who Guided Jointly the Ph.D. Theses In LIS:

Table 6 shows the list of joint guides of Ph.D theses. In 1992, the University of Burdwan awarded the first doctoral degree in librarianship under the joint guideship of Dr. Pulin Behari Barua and Dr. Pranab Kumar Chakraborty. During the study period, Jadavpur University awarded maximum 7 Ph.D theses under joint supervisor, followed by University of Burdwan and Vidyasagar University with 4 Ph.D theses each. LIS research under joint guideship mode is increasing day by day. This is an encouraging sign in research activities and definitely this trend will increase more interdisciplinary research in LIS disciplines.

Sl.No.	Name of the Guides	University	Year
1.	Prof. Pulln Behari Barua & Dr. Pranab Kumar Chakraborty	University of Burdwan	1992
2.	Prof. Mukundalal Chakraborty & Prof. Aditya Kumar Ohdedar	Jadavpur University	1993
3.	Prof. Prabir Roy Choudhury & Prof. Pabitra Sarkar	Jadavpur University	1995
4.	Prof. A.R.D. Prasad & Prof. Asok Basu	Vidyasagar University	1996
5.	Prof. G. Bhattacharya & Prof. Prabir Roy Choudhury	Jadavpur University	1998
6.	Prof. Ashok Basu & Prof. Juran Krishna Sarkhel	Vidyasagar University	2001
7.	Prof. A. Sengupta & Prof. Pijush Kanti Jana	Vidyasagar University	2005
8.	Prof. Bijoypada Mukherjee & Prof. Juran Krishna Sarkhel	Jadavpur University	2006
9.	Prof. Biplab Chakraborti & Dr. Soumitra Sarkar	University of Calcutta	2006
10.	Prof. Pulln Behari Barua & Prof. Chittaranjan Sain	University of Burdwan	2006
11.	Prof. Subal Chandra Biswas & Prof. Somnatah Mukherjee	University of Burdwan	2006

12.	Prof. Chaitali Dutta & Prof. B.K. Sen	Jadavpur University	2008
13.	Prof. Chaitali Dutta & Prof. B.K. Sen	Jadavpur University	2008
14.	Prof. Devika P. Madalli & Prof. Juran Krishna Sarkhel	Vidyasagar University	2008
15.	Prof. Pijush Kanti Jana & Prof. J.N Satpathi	Vidyasagar University	2011
16.	Prof. Subal Chandra Biswas & Prof. Parthasarathi Mukhopadhyay	University of Burdwan	2012

Table-6 : List of Supervisors who guided jointly

Subject wise Distribution of Ph.D. theses in LIS:

Table 5 shows that the LIS research has done under 22 major sub-fields. Majority of the Ph.D's consisting of 10% (12 theses) are produced in information needs & information seeking behaviour area, followed by information retrieval & information systems with 10 theses (8.33%). It is also noted from the analysis of data that very little emphasis is made in the field of preservation and conservation, cataloguing, school library and database design & development. Few research has done in current topics, such as, web 2.0, webometric analysis, consortium, library automation and digital library.

Sl. No.	Topics	Number of Ph.D. theses	Percentage
1.	Information needs & information seeking behaviour	12	10
2.	Information retrieval & information systems	10	8.33
3.	Literature analysis	9	7.5
4.	Information sources & services	9	7.5
5.	Public library & act	9	7.5
6.	Bibliographical control & documentation	7	5.83
7.	University library	7	5.83
8.	Bibliometric/ webometric analysis	6	5
9.	College library	6	5
10.	Library resource sharing, networking & consortia	5	4.16
11.	Collection development	5	4.16
12.	Subject headings	4	3.33

13.	Classification	4	3.33
14.	Library management	4	3.33
15.	Indexing	3	2.5
16.	Library automation & digitization	3	2.5
17.	Preservation and conservation	2	1.66
18.	Cataloguing	2	1.66
19.	Knowledge management	1	0.83
20.	School library	1	0.83
21.	Database design & development	1	0.83
22.	Miscellaneous	10	8.33
	TOTAL	120	100

Table-7: Subject wise distribution of Ph.D. theses

Conclusion:

The research activity in West Bengal carried out in LIS discipline during 1979-2012 has been quite significant. The growth and development of research output in LIS has increased like other disciplines. So far, 120 LIS theses are produced by research scholars and majority of them are in English language. The findings identified that Prof. Prabir Roy Choudhury supervised maximum Ph.D's in West Bengal. Furthermore, the subjects like Information needs and information seeking behaviour (12 theses) are the preferred subjects among the scholars.

LIS research in West Bengal is gaining momentum and research activities are increasing every year significantly. It demands strong bibliographical control and it needs creation of full text databases of Ph.D. theses by the universities through cooperative efforts. It should be available in "shodganga" repository of INFLIBNET. So that, the remote scholars can access the research works. This will increase quality research, stop plagiarism and avoid overlapping of research. Besides in LIS, there is the dearth of post doctoral research facility. It should be provided to scholars for gaining boost in LIS research activities.

References:

- Chandrashekhara, M & Ramasesh, C.P. (2009). Library and Information Science Research in India. *Asia -Pacific Conference on Library & Information Education & Practice 2009*, 530- 537.
- Dhiman, A. K. (2011). Research Output in LIS: A Bibliometric Study of Ph.Ds Awarded in India during 2006-2010. *Pearl: A Journal of Library and Information Science*, 5(4), 40-62.
- Gokhale, Pratibha. (2010). Library and Information Science Education in Maharashtra: A Perspective. *DESIDOC Journal of Library & Information Technology*, 30 (5), 48-55.
- Kumbar, Mallinath and Raju N, Vasantha. (2008). Research Productivity in Library and Information Science in India during 1957-2006. *SRELS Journal of Information Management*, 45(1), 71-80.

- Madasamy, R. & Alwarammal, R. (2009). Doctoral Degrees in Library and Information Science in India during 2003-2008: a study. *Annals of Library and Information Studies*, 56(4), 262-266.
- Mahapatra, R.K. & Sahoo, Jyotshna. (2004). Doctoral Dissertations in Library and Information Science in India 1997-2003: a study. *Annals of Library and Information Studies*, 51(1), 58-63.
- Raju, P.Soma. (2008). Research In Library and Information Science. *Pearl: A Journal of Library and Information Science*, 2(1), 3-9.
- Satlja, M.P. (1999). Doctoral research in Library and Information Science in India: Some observations and comments. *Libri*, 49, 236-242.

Appendices:

University Wise List of Ph.D. Theses in Library and Information Science during 1979 to 2012.

University of Kalyani

1. Haque, Md. Enamul: Information Needs and Information Seeking Behaviour of users of Agricultural University Libraries in Bangladesh: a survey (Guide: Dr. Bidhan Ch Biswas), University of kalyani, Kalyani, 2009.
2. Pattnayak, Subhaluxmi: Preservation of Library and Archival Materials In West Bengal: a critical study (Guide: Dr. Bidhan Ch. Biswas), University of kalyani, Kalyani, 2007.
3. Paul, Dibyendu: Bibliographic Control of Bengali publications: a study of current bibliographic sources (Guide: Prof. Sabuj Dasgupta), University of kalyani, Kalyani, 2007.
4. Ray, Arun Kr.: An evaluative study of the resource utilization and users behaviour in Govt. college libraries in West Bengal (Guide: Dr. Bidhan Ch Biswas), University of kalyani, Kalyani, 2010.
5. Ray, Partha Pratim: Tagoreana Today, a comparative study of Tagores' literature five years before and after expiry of copyright (Guide: Dr. Bidhan Ch Biswas), University of kalyani, Kalyani, 2008.

Rabindra Bharati University

1. Basu, Keya: Proyukti: Bishoy slronam talika (In Bengali) (Guide: Prof. Pinaki Nath Mukhopadhyay), Rabindra Bharati University, Kolkata, 2008.
2. Chattopadhyay, Madhab Chandra: List of Subject Headings on Social Sciences in Bengali Language: Limitations and Its Solutions (Guide: Prof. Pinaki Nath Mukhopadhyay), Rabindra Bharati University, Kolkata, 2012.
3. Das Thakur, Biswajeet: Development of Cinema literature in India during 1898-1998 (In Bengali) (Guide: Prof. Pinaki Nath Mukhopadhyay), Rabindra Bharati University, Kolkata, 2006.

Jadavpur University

1. Bandyopadhyay, Ratna: Compilation of Comprehensive List of standard subject Headings on Humanities in Bengali (Guide-Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 1995.
2. Bandyopadhyay, Amit Kumar: Bibliometric analysis of doctoral dissertations of University of Burdwan: a study of Information flow in some selective disciplines (Guide Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur, 2002.
3. Banerjee, Arnab Kumar: History of Science Communication of Bengal (1947-

- 2005): Review and Analysis of Information Sources (Guide: Dr. Subarna Kumar Das), Jadavpur University, Jadavpur, 2011.
4. Basak, Rina: Information Needs and Information Seeking Behaviour of Research Workers in the Field of Fishery and Fish Farmers in West Bengal (Guide: Prof. Amitabha Chatterjee), Jadavpur University, Jadavpur, 2010.
 5. Biswas, Bidhan Chandra: Information seeking behavior of users in University Libraries in West Bengal: a case study of three University Libraries (Guide: Prof. Chaitali Dutta), Jadavpur University, Jadavpur, 2007.
 6. Bhattacharya, Mitali: Changing Higher Educational Scenario Vis -À-Vis College Library Development in West Bengal: A Case Study (Guide: Prof. Amitabha Chatterjee), Jadavpur University, Jadavpur, 2009.
 7. Bhattacharya, Sanat: ViswaVarati Granthagare Prachin o Dushprapya Bangla Grantha: Bisoy Bishleshan o gabeshanar upadan (Guide: Prof. Krishnapada Majumder), Jadavpur University, Jadavpur, 2011.
 8. Bhattacharya, Udayan: Emergence of interdisciplinary subject in science and technology in 20th century and their treatment in different classification schemes (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2006.
 9. Banik, Manjusree: Information services for Jute Research Institutes in Bangladesh: A Critical study of the present Scenario and a plan for the future development (Guide: Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur. 2001.
 10. Chakrabarty, Mahua: Micro-Modeling of Individual Level Information Seeking Behaviour: A Heterogeneity Specific Study (Guide: Prof. Chaitali Dutta), Jadavpur University, Jadavpur, 2011.
 11. Chakraborty, Susmita: Information seeking and information utilization pattern of psychiatrists in West Bengal: A Survey. (Guide: Prof. Chaitali Dutta & Prof. B.K. Sen), Jadavpur University, Jadavpur, 2008.
 12. Chatterjee, Barun Kumar: Teacher education college libraries in West Bengal: A User's survey (Guide: Prof. Aditya Kumar Ohdekar), Jadavpur University, Jadavpur. 1995.
 13. Chattopadhyay, Amit Kumar: Role of subject indexing languages on the design and development online bibliographic information storage and retrieval systems (Guide: Prof. Mangala Prasad Sinha), Jadavpur University, Jadavpur. 1993.
 14. Chatterjee, Gautam: Fifty years of Bengali Feature Films, Filmography and History with a Trend Analysis (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2002.
 15. Chatterjee, Sunil Kumar: Analytical study of contributions in Bengali Scientific Periodicals originated in West Bengal (1947-2001) (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2005.
 16. Chaudhuri, Priti: Swadhinottar Bangia sahityer gati o Prakriti: (1947-1986) Trends of Post-Independent Bengali Literature: (1947-1986) (Guide: Prof. Prabir Roy Choudhury & Prof. Pabitra Sarkar), Jadavpur University, Jadavpur. 1995.
 17. Chaudhuri, Sabuj Kumar: The Impact of Intellectual Property Rights (IPR) on Biodiversity and Biotechnology in India and designing a Model Biodiversity Information System (Guide: Prof. Chaitali Dutta), Jadavpur University, Jadavpur, 2006.
 18. Choudhury, Sanghamitra: Adhunik Bangla Sahitya Mahila Rachita rachanar kramavikas, 1850-1900 (Guide: Prof. Aditya Kumar Ohdekar), Jadavpur University, Jadavpur. 2001.

19. Chowdhury, Gobinda Gopal: Nature and applicability of Farradane's relational analysis with particular reference to the preparation of Linear Index entries (Guide: Prof. Mangala Prasad Sinha), Jadavpur University, Jadavpur, 1991.
20. Das, Anup Kumar: An evaluative study of some selected libraries in India undergoing the process of digitization (Guide: Prof. Chaitali Dutta & Prof. B.K. Sen), Jadavpur University, Jadavpur, 2008.
21. Das, Binod Behari: Paschimbange banglay prakashito jibonimulak tathyo utsyo (1947-2002)-ponjlikaran o bishleshanatyak samiksha (Guide: Prof. Krishnapada Majumder), Jadavpur University, Jadavpur, 2009.
22. Das, Biswajit: Kazi Nazrul Islam (1899-1976) ekti tathwanistha jiboni granther upadan samuher panjlikaran o bisleson (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2005.
23. Das, Subarna Kumar: Paschim Banger Sunderban Anchal: Tathya sutra samiksha aur Bisleson (Sundarban of West Bengal: Review and analysis of Information sources) (Guide: Prof. Prabir Roy Choudhury), J. U., Jadavpur, 2005.
24. Dasgupta, Arjun: Indian historical periodicals as source of research, from the beginning of 1970 (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 1992.
25. Dutta, Bidyarthi: An analytical investigation into the characteristics of a subject: a case study (Guide: Prof. Krishnapada Majumder), Jadavpur University, Jadavpur, 2008.
26. Ghosh, Sibabrata: Geological documentation in India and development of an integrated Geoscience Information systems and services (Guide: Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur, 1995.
27. Jas, Nikhil Kumar: Status of periodicals management in the University Libraries in West Bengal: with special reference to subscription of same periodicals and its impact on economy (Guide: Prof. Chaitali Dutta), Jadavpur University, Jadavpur, 2006.
28. Mandal, Gorachand: Importance of patent information in the socio-economic development of India (being a signatory of GATT Agreement) (Guide: Prof. Bijoypada Mukherjee), Jadavpur University, Jadavpur, 2002.
29. Majumder, Krishnapada: Public Library movement in West Bengal and the Bengal Library Association (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2002.
30. Mitra, Rukmini: Growth development and structure of bio-technology information system in India: a critical study (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2001.
31. Mondal, Bharguram: Library Network in India: policy analysis, implementation and management (Guide: Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur, 2003.
32. Mukherjee, Parthasarathi: Designing a web based model for Community Information Services through the Public Library System in West Bengal (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 2007.
33. Mukherjee, Pinaki Nath: Compilation of a comprehensive list of subject headings on Science and Technology in Bengali (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 1997.
34. Niyogi, Bratati: Information needs in Jute and Allied Fiber industries in India

- (Guide: Prof. Mukundalal Chakraborty & Aditya Kumar Ohdedar), Jadavpur University, Jadavpur, 1993.
35. Rahman, Ziaur: Bibliographic Analysis of the Citations of Doctoral Thesis on Science Submitted to North Bengal University. (Guide: Dr. Udayan Bhattacharya), Jadavpur University, Jadavpur, 2012.
 36. Samanta, Ranjan: Public Library Services In Different Continents of World: An Evaluative Study, Suggesting a suitable Model in West Bengal (Guide: Dr. Udayan Bhattacharya), Jadavpur University, Jadavpur, 2012.
 37. Sarkar, Nikhil Chandra: Development of an integrated Public Library System for Bangladesh with reference to a Model Public Library Bill (Guide: Prof. Bijoypada Mukherjee & Prof. Juran Krishna Sarkhel), Jadavpur University, Jadavpur, 2006.
 38. Sarkar, Utpal: Public library system In Bangladesh: Its origin, growth and future prospect, (Guide: Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur, 2001.
 39. Sarkhel, Juran Krishna: A General theory of information analysis for secondary Information work and Services (Guide: Prof. G. Bhattacharya & Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur. 1998.
 40. Satpathi, Jatindranath: Design and network for resource sharing among the Health science libraries in West Bengal (Guide: Prof. Mukunda Lal Chakraborty), Jadavpur University, Jadavpur, 1999.
 41. Sen, Bimal Kanti: Indian scientific periodicals: A study of their Origin and Development up to 1900 (Guide: Prof. Prabir Roy Choudhury), Jadavpur University, Jadavpur, 1995.
 42. Uddin, Nazim: Application of Information Technology (IT) in Libraries of Private Universities of Bangladesh: An Analytical Study (Guide-Prof. Krishnapada Majumder), Jadavpur University, Jadavpur, 2009.

University of Calcutta

1. Barui, Subal Kumar: Collection development of Pall language and literature In academic libraries of West Bengal during 20th century (Guide: Prof. Biplob Chakrabarti), University of Calcutta, Kolkata, 2011.
2. Basak, Anita: Collection development in Calcutta University Library System: policies & utilisation-A critical study (Guide: Prof. Ratna Bandhopadhyay), University of Calcutta, Kolkata, 2010.
3. Bhattacharyya, Swapna: Information management system in Museums in West Bengal (Guide Prof. Bhubaneswar Chakrabarty), University of Calcutta, Kolkata, 2004.
4. Chandrashekharaiah, H: Bibliographic control of Kannada Literature: Problems and prospects (Guide: Prof. Bhubaneswar Chakrabarty), University of Calcutta, Kolkata, 2005.
5. Chattopadhyaya, Abira: Preservation System of College and University Libraries of West Bengal In Relation to Climatic Condition (Guide: Prof. Biplob Chakrabarti), University of Calcutta, Kolkata, 2007.
6. Chattopadhyaya, Tridib: Information Resource Management of engineering college libraries in West Bengal (Guide: Prof. Biplob Chakrabarti), University of Calcutta, Kolkata, 2011.
7. Das, Asitabha: Treatment of Authorship: A Critical Study of Catalogue Codes (Guide: Prof. Pijush Kanti Mahapatra), University of Calcutta, Kolkata, 2007.

8. Datta, Sarmishtha: An Approach to Knowledge Management (KM) Problems and Solutions for Indian Situations: A Conceptual Model for Library KM (Guide: Prof. Biplab Chakrabarti and Dr.Soumitra Sarkar), University of Calcutta, Kolkata, 2006.
9. Ghosh, Gopa: Framing of a model information retrieval system on government documents in India (Guide: Prof. Biplab Chakrabarti), University of Calcutta, Kolkata, 2011.
10. Gupta, Anup Kumar: Management of University Libraries in West Bengal since Independence with special reference to Collection Development and manpower planning (Guide: Prof. Arjun Dasgupta), University of Calcutta, Kolkata, 1998.
11. Kochukoshy, K. K.: Bibliographical Control in Malayalam Literature: Problems and Prospects (Guide: Prof. Bhubaneswar Chakraborty), University of Calcutta, Kolkata, 2007.
12. Kundu, Dipak Kumar: Information Needs of Cottage Industries in Barrackpore and Barasat Subdivisions of North 24 Parganas Districts, West Bengal (Guide: Prof. Biplab Chakrabarti), University of Calcutta, Kolkata, 2009.
13. Maiti, Arabinda: Organization of Information Technology (IT) units of the University libraries in West Bengal with special reference to the Calcutta University library system (Guide: Prof. Biplab Chakrabarti), University of Calcutta, Kolkata, 2011.
14. Maitra, Pubalka: Health Information Services in the Medical College Libraries of West Bengal: A Critical Study (Guide: Prof. Biplab Chakrabarti), University of Calcutta, Kolkata, 2009.
15. Majumdar, Swapna: Public Library acts in India—a comparative study (Guide: Prof. Pijush Kanti Mahapatra), University of Calcutta, Kolkata, 2003.
16. Mitra, Tarun Kumar: Contribution of Rajsekhar to the development of subject classification, University of Calcutta, Kolkata, 1979.
17. Mukhopadhyay, Chaitali: Documentation in Jute Technology: its origin and development (Guide: Prof. Tarun Kumar Mitra), University of Calcutta, Kolkata, 1996.
18. Mukhopadhyaya, Lopita: An Evaluative Study of School Libraries in and around Kolkata (Guide: Prof. Subir Kumar Sen), University of Calcutta, Kolkata, 2010.
19. Rath, Pravash Narayana: Development of systematic bibliography in India (Guide: Prof. Tarun Kumar Mitra), University of Calcutta, Kolkata, 2004.
20. Ray, Sibani: Problems and prospects of cataloguing in Bengal: An analytical study (Guide: Prof. Arjun Dasgupta), University of Calcutta, Kolkata, 2002.
21. Salam, Sk. Abul: Demands of the library and information science professionals in the industrial organizations in India in the present perspective: an evaluative study (Guide: Prof. Biplab Chakrabarti), University of Calcutta, Kolkata, 2011.
22. Sarkar, Soumitra: An analytical study of the Growth and Development of Public Libraries in Bengal since the inception of Calcutta Public Library in 1836 (Guide: Prof. Arjun Dasgupta), University of Calcutta, Kolkata, 1995.
23. Sarma, Hari Prasad: Growth-informetrics and Indicators of superconductivity research and literature 1911-2000 (Guide: Prof. Subir Kumar Sen), University of Calcutta, Kolkata, 2006.
24. Sengupta, Indranaryan: Recent directions of growth of biomedical knowledge: An analytical study based on observed changes in the scientific impact of serial publications, University of Calcutta, Kolkata, 1980.

Burdwan University

1. Akhter, Rowshan: Role of the Bangladesh National Library in Bibliographical organization and Control (Guide: Prof. Pulln Behari Barua), University of Burdwan, Burdwan, 1994.
2. Ambla, Golam: Use of Physical Science Periodicals in selected university libraries of West Bengal: a comparative study (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2008.
3. Bar, Narendra Kumar: Role of UNESCO in the Development of Library & Information Services In India (Guide: Prof. Pulin Behari Barua & Prof. Chittaranjan Sain), University of Burdwan, Burdwan, 2006.
4. Bose, Sreekanta: Prak-Palashi Banglaye jana-samaje skshao-granthagar byabasthar provab, 1700 AD -1757 AD. (Administration of Oriental Bengal Public Libraries during 1700-1757 A.D) (Guide: Prof. Subal Chandra Biswas), University of Burdwan, Burdwan, 2003.
5. Jalal, Samir Kumar: Indian Universities on the Web: Analysis of Hyperlinks through the Application of Webometric Tools and Techniques(Guide: Prof. Subal Chandra Biswas & Dr. Parthasarathi Mukhopadhyay), University of Burdwan, Burdwan, 2012.
6. Kamila, Kanchan: Information Needs and Patterns of Information Seeking Behaviour of the Santal Community of Jamboni Block in West Midnapur District, W.B. (Guide: Prof. Subhal Chandra Biswas), University of Burdwan, Burdwan, 2007.
7. Konar, Satyangsusekhar: Impact of public library legislation on the Socio-economic development of West Bengal: A critical study of West Bengal Libraries Act, 1979 (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1990.
8. Kundu, Shyam Sundar: Ranganathaner Granthagar o Tathayavigyan Vabanay Sanskrita Sahityer Provab: Ekti Barnanamulak Salkshya (Guide: Prof. Subal Chandra Biswas and Dr. Somtaha Mukherjee), University of Burdwan, Burdwan, 2006.
9. Lahiri, Timir Kumar: Computer Application In College libraries in North 24 Parganas (W.B.): Status, Problems and Prospects (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2012.
10. Mahapatra, Manoranjan: Growth of literature and citation pattern among the Indian Journals in the field of Botany.1950-1980 (Guide: Sri Bijoynath Mukherjee), University of Burdwan, Burdwan, 1984.
11. Md. Musleuddin: Medical College Libraries in West Bengal: Present Status and a Plan for Future Development (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2010.
12. Mondal (Ghosh), Maityayee: Satisfying End Users through Consortia Based Systems: A Model for Collaboration among Engineering Libraries in Western India (Guide: Prof. Subal Chandra Biswas), University of Burdwan, Burdwan, 2009.
13. Mostafa , Md. Golam: Study of the Readers' Services in the University Libraries of Bangladesh with Special Reference to the Services in the Dhaka and the Rajshahi University Libraries to suggest a Model for University Library System of Bangladesh (Guide Prof. Amit Kumar Bandyopadhyay), University of Burdwan, Burdwan, 2004.

14. Mukhopadhyay, Chinmay: Application of TQM In the Libraries of Some Selected Academic Institutions In Kolkata: A Comparative Study (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2012.
15. Mukhopadhyay, Kabita: Bardhaman Jelay prakashit samayik patra-patrika panjir bishleshanatmak sameeksha, 1960-85. (An Evaluative study of contemporary newspapers and magazines In Vardhaman District: 1960-1985) (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1991.
16. Nandi, Amitava: Contributions of the University of Burdwan In Pure Sciences Research in West Bengal: An analytical study (Guide: Prof. Amit Kumar Bandyopadhyay), University of Burdwan, Burdwan, 2012.
17. Nandi, Subodh Gopal : A comparative study of the communication channel in different libraries with special reference to University Library (Guide: Prof. Pulin Behari Barua & Prof. Pranab Kumar Chakraborty), University of Burdwan, Burdwan, 1992.
18. Nayak, Gurudas: Restructuring the College Library System towards Serving the Information Needs of Learners In Distance Education Mode: A Study Based on Colleges in Burdwan Division of West Bengal (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2008.
19. Pradhan, Debasish: An assessment of Public Library Systems and services in Darjeeling district of West Bengal from information marketing point of view (Guide: Prof. Tridib Tripathi), University of Burdwan, Burdwan, 2009.
20. Rahman, Md. Anisur: Use of Information Technology in some selected University Libraries of Bangladesh: an Analytical Study (Guide: Prof. Amit Kumar Bandyopadhyay), University of Burdwan, Burdwan, 2010.
21. Ray, Dipak Kumar: Role of Librarians In India from 12th Century to 18th Century: An Analytical Study (Guide: Sri Aloke Mitra), University of Burdwan, Burdwan, 1995.
22. Rout, Ratnakar: Management of University libraries In India with special reference to Orissa and West Bengal: A critical study (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1988.
23. Saha, Nimai Chand: Application of Information and Communication Technologies In University Libraries In West Bengal: The Human Resource Perspective (Guide: Prof. Subal Chandra Biswas), University of Burdwan, Burdwan 2012.
24. Salbaba, Bathala: A Study of co-operation and networking among Engineering and Technological Libraries In India (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1992.
25. Sain, Chittaranjan: A study of personnel problems In library management with special reference to University libraries In West Bengal (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1995.
26. Seal, Dipak Kumar: Information Needs, Awareness and Information Seeking Habits of Elected Women Representatives of Local Government: A Study with Special Reference to the Panchayati Raj Institutions In West Bengal (Guide: Prof. Subal Chandra Biswas), University of Burdwan, Burdwan, 2012.
27. Tripathi, Tridip: Growth and development of Indian Library and Information Science periodical Literature. 1970-85: A bibliometric study (Guide: Prof. Pulin Behari Barua), University of Burdwan, Burdwan, 1992.

Vidyasagar University

1. Aruna, Aroti: Structural design of a bibliographic database on Gas Turbines using AACR2, UNIMARC and CDS/ISIS (Guide: Prof. Asok Basu), Vidyasagar university, Midnapore, 1999.
2. Balasuhramanian. S: Information needs and Information seeking behaviour of persons in Medical education in Tamil Nadu (Guide: Prof. Asok Basu), Vidyasagar University, Midnapore, 1999.
3. Chakraborty, Arun Kumar: An Evaluative Study of the Information Systems for Environmental Sciences: A Critical Approach In the Indian Context (Guide: Prof. Asok Basu), Vidyasagar University, Midnapore, 1998.
4. Chakraborty, Biplab: Information seeking behaviour of the Toto community in Jalpaiguri District (Guide: Prof. Asok Basu), Vidyasagar University, Midnapore, 1996.
5. Ganguly, Pranab Kumar: A Role of Public Libraries in Creating Serial Consciousness and In Promoting the Prospect of Functional Literacy : A Study in the District of Burdwan (Guide: Prof. A. Sengupta & Prof. Pijush Kanti Jana), Vidyasagar University, Midnapore, 2005.
6. Ghosh, Bhabani Kumar: A Study of Reference and information Services In University Libraries in West Bengal: a Quantitative and Qualitative approach (Guide: Prof. Juran Krishna Sarkhel), Vidyasagar University, Midnapore, 2001.
7. Hatua, Sudip Ranjan: A Model for Mapping Internet Resources for Generation of Web based Information Retrieval System: A case Study of Aerospace Science and Technology (Guide: Prof. Devika P. Madall), Vidyasagar University, Midnapore, 2008.
8. Jana, Lakshmi Kanta: An Evaluative Study of Motivation and Job-Satisfaction among Non-government College Librarians in West Bengal (Guide: Prof. Pijush Kanti Panigrahi), Vidyasagar University, Midnapore, 2006.
9. Jana, Pijush Kanti: Design of a Classification Scheme for Knowledge Representation Model In Anthropology (Guide: Prof. Ashok Basu & Prof. Juran Krishna Sarkhel), Vidyasagar University, Midnapore, 2001.
10. Maiti, Goutam: Identification and Effectiveness of Factor in Designing a Newspaper Information Retrieval System (Guide Prof. Subal Chandra Biswas), Vidyasagar University, Midnapore, 2006.
11. Panigrahi, Pijush kanti: Design and Development of a Knowledge representation model for Analytical Synthetic Classification with special Reference to Medicine (Guide Prof. A.R.D. Prasad & Prof. Asok Basu), Vidyasagar University, Midnapore, 1996.
12. Patel, Dimple: Development of Algorithms for Indexing and Searching with Special Reference to Telugu Documents in UNICODE (Guide: Prof. Devika P. Madall), Vidyasagar University, Midnapore, 2006.
13. Rahaman, Kazi Moklesur: An Evaluative Study of Reference and Information Services In University Libraries of Bangladesh (Guide: Prof. Pijush Kanti Jana & Dr. J.N Satpathi), Vidyasagar University, Midnapore, 2011.
14. Rahaman, Md. Mizanur: Development of Secondary School Literacy System In Bangladesh: Problems and Prospects (Guide: Prof. Pijush Kanti Jana), Vidyasagar University, Midnapore, 2010.

15. Rath, Durga Shankar: Design of a Heuristic Based Expert System for Automatic Identification of Bibliographic Data Elements from the title pages of the Document (Guide: Prof. A.R.D. Prasad), Vidyasagar University, Midnapore, 2001.
16. Ray Chowdhury, Nitai: Growth Development and Structure of Oceanographic Information System In India: A Critical Study (Guide: Prof. Juran Krishna Sarkhel), Vidyasagar University, Midnapore, 2008.
17. Suman, Aparajita: An Analysis of Web Ontology Tools and Techniques for the Development of a Conceptual Frame work for Digital Library Perspectives (Guide: Prof. Devika P. Madalll & Prof. Juran Krishna Sarkhel), Vidyasagar University, Midnapore, 2008.
18. Sutradhar, Bablu: Electronic Information Sources, Services and the Possiblilty of Networking for Resource Sharing in the Libraries of the Indian Institute of Technology: An Evaluation (Guide: Prof. Juran Krishna Sarkhel), Vidyasagar University, Midnapore, 2005.
19. Thakur, Ranjan Singha: Problems and Prospects in the Design and Implementation of Quality Management System In Special Libraries of Kolkata (Guide: Prof. Pijush Kanti Jana), Vidyasagar University, Midnapore, 2010.

STUDIES OF INFORMATION BEHAVIOUR OF LEGAL PROFESSIONALS—A REVIEW

KANKAN KUMAR CHOWDHURY

Abstract: Studying information behaviour is an evergreen area of research in information science. Knowing the characteristics of various professional groups in relation to their information related work is the key factor for assessing, designing and developing information products and services for that target group. Legal professionals are such a major group who highly depend on information owing to the nature of their day-to-day activities. This article is an attempt to review the studies that have been done to unfold the information behaviour of legal professionals.

Keywords : Information Behaviour, Legal Professionals, Advocates, Attorneys, Lawyers, Judges, Information Needs, Information Seeking Behaviour.

Introduction

The concept of 'information behaviour' was coined in the late 1990s, but it traces its roots to the concept of 'information needs and uses' that arose in the 1960s. There has been a gradual shift in the focus of information behavior research from a system orientation to a user orientation. Systems oriented studies focused on formal information systems, their artifacts (e.g., books, articles) and venues (e.g., libraries, schools, radio and television). In the 1970s, study began to shift toward its contemporary emphasis on the individual as information seeker and user.

While researchers use various definitions of information behaviour, for this study purpose, the reviewer considers it as the study of how people need, seek, give and use information in different context, including the work place and everyday living (Pettigrew, 2001). This definition is consistent with Wilson, who defines information behaviour as "the totality of human behavior in relation to sources and channels of information including both active and passive information seeking and information use" (Wilson, 1997).

Legal Professionals

Law is one of the most important social science disciplines having interface with almost all other social sciences. This discipline of knowledge deals with justice dispensation. In the age of globalisation law has assumed an unparalleled relevance. Globalisation along with rapid development of information and communication technologies (ICT) smeared the contours of the epistemology of the discipline of law. In this changing society, the scope of the legal profession is widening rapidly and the role of the members of that profession has become more challenging. Legal professionals usually refer to jurists (academic lawyer, teacher and scholars), judges, practitioners of law, legal advisors and legal technicians (e.g. petition writers), who utilize their technical knowledge in course of performing their occupational roles.

Legal profession is a profession where much turns on the arguments, its development, and evaluation; arguments are essential part of any trial, brief or

opinion. It follows that any good thinkers can be good legal thinkers. And such people have a vital role in development of any society.

In this age of ours, when science and technology have made great advances, complicated social and economic issues are crying for solutions, the legal professionals will have to adapt themselves in new situations so as to ensure the greatest good of largest number. In the social set up that is arising this profession has to come forward to use its skill or expertise for the benefit of the community at large and thereby play worthy role in the administration of justice.

By the nature of their work they use legal knowledge recorded in different documents. These documents may be in various forms like printed or digital or any others forms and the professionals should be well acquainted with them. An information system should be there to provide services as and when they need. For designing such information system knowledge of respective users' information behaviour is a prerequisite.

Studying Information Behaviour of Legal Professionals

Many scholars have made efforts to explore and analyze the information seeking behavior of legal practitioners and have tried to distinguish this user population from other researchers and professions. There is also literature that analyzed the information seeking behaviors of judges and law students and legal instructors; however, most of literature on legal Informatics primarily focuses on the information seeking of attorneys even if the literature did not really care about whether they are experienced or novice attorneys.

In 1992, a study had been done to identify, isolate and describe the factors which constitute the information seeking behaviour of appellate judges. For this fifty seven judges of the Florida District Courts of Appeal are studied by Melody Hainsworth. The study mentioned that Appellate judges, in their roles as decision makers, are extensive users of information. Major characteristics of their information related activities are noteworthy to mention here.

i) Appellate judges do not trust and are skeptical of the information provided to them. ii) Judges have particular needs with regards to organizing information which are not met by any system. iii) The time required for information seeking is predicated upon the judge's situation regarding the disposition of the case. iv) A judge's years on the bench suggests a pattern of information seeking at oral argument. v) Two critical events influence when judges most keenly need and seek information: the oral argument and decision conference. vi) Judges seek information independently and individually. vii) A judge's distance from the information source approximates and predicts its relevance, use, and value to the judge. viii) Two resources provided by the state, which if absent, would most affect the judges' information seeking are their law clerks and personal library collections. ix) The quality and depth of information seeking by the judges is guided primarily by their internal feelings of satisfaction toward their resulting opinions. x) Judges' use of the computer is affected by the nature of their job which involves primarily reading and writing.

xi) Judges prefer, and value most, information in hardcopy. xii) Judge's information seeking is limited to resources within the physical confines of the courthouse. xiii) A judge's information seeking behavior is affected by time. (Hainsworth, 1992)

Others studies directly or indirectly probe into the information needs and seeking behaviour of legal professionals in India or abroad are equally important. Heitz, T. et al (1979) describes the library services of judicial administration and Marsha Carey considers the information and library service problems of newly appointed judges. Blair Kauffmann compares the information needs of judges and lawyers. Sentencing information systems may be seen as part of an attempt to increase consistency of approach and application of tariff principles in sentencing. Tait, D. (1998) argues that increasing surveillance—over judges, court officials and police as much as offenders—may be another narrative which shapes the development of systems of recording sentencing statistics. There are also other narratives which are largely silenced by the way the information is recorded, though they may sometimes play an important part in the court performances. These include: (at the punitive end) stamping out disrespect, acting as a conduit for public anger, identifying scapegoats and (at the liberal end) minimizing harm, declaring forgiveness, resolving conflict, and producing justice despite the law. These narratives open up the possibility of other ways of collecting and reporting statistics, which may include linking sentencing information to a range of other social and economic data. In particular the use of more socially inclusive narratives offers the possibility not just of endlessly repeating old tunes like a jukebox, but modelling alternative futures like a holodeck. Computer technology can offer to sentencers the opportunity not just to standardize penal pain but to minimize the social harm resulting from crime. S. Majid and G.M. Kassim (2000) reported results of a study to identify the information channels used by the International Islamic University Malaysia (IIUM) law faculty members, information sources preferred by them, methods applied for getting the needed information and their library use pattern. It was found that respondents used various sources for acquiring the needed information. I. Haruna and I. Mabawonku (2001) studied the information needs and seeking behaviour of lawyers in Lagos, Nigeria. Results reveal that many lawyers perceive the need to know the latest decisions of superior courts as their greatest professional information need. The library has been identified as the most heavily consulted source for job related information and librarians do not fulfill their role in meeting the information needs of lawyers. In the American Association of Law Libraries 72nd Annual Meeting, San Francisco, 1-5 July 79, Blair Kauffmann compares the information needs of judges and lawyers. Elliott and Kling (1996) found that the hierarchical role of legal professionals often influenced their access to digital library systems. They also found that, whilst some legal professionals still preferred paper sources (such as one of the judges who would much prefer to browse a paper-based case on his bench rather than excuse himself to use LexisNexis in his chamber), the discontinuation of some paper sources in favour of electronic ones effectively 'forced' legal professionals to

increasingly turn to electronic information sources. Oulanov and Pajarillo (2003) also conducted a study on perceptions of LexisNexis, this time using structured questionnaires that were issued to eight academic librarians at Queens borough Community College in New York City aimed at uncovering the librarians' perceptions on three aspects of the resource: its 'retrieval features,' its 'effectiveness' and other usability-related aspects. The authors concluded that LexisNexis 'fared well in almost all questions asked,' with the exception of low ratings on the 'necessity of training' question. The study by Vollaro and Hawkins (1986) was aimed at discovering when lawyers might search electronic legal resource themselves and when they might turn to intermediaries. Yuan (1997) was interested in lawyers' Information search behaviour, but did not have a wider aim of better supporting this behaviour. The other studies reviewed in this section were aimed at gaining an understanding of user attitudes towards and perceptions of electronic legal resources. Kuhlthau and Tama (2001) make some recommendations for the design of electronic legal resources based on their insights gained into lawyers' Information-seeking behaviour. Kidd (1978) studied the information needs of solicitors in a private practice in Scotland. Kidd's ultimate objective was to examine whether the solicitors' needs could be supported through the introduction of electronic legal resources. Kidd found that solicitors work in an information intensive environment and was prone to constant interruption. He found that solicitors sought information in order to assist in solving legal cases and in order to keep abreast of the law, often remaining unaware that much processing of information was going on. Kidd concluded that although a computerised information retrieval system might support the work of solicitors and was regarded by them as a welcome development, none of the lawyers that were interviewed expressed a great need for a computerised service. Cheatle (1992) also studied the information needs of solicitors in private practice, this time in a London firm. She noted that lawyers with little experience in a particular branch of law sought information frequently because they were still on a learning curve but older, more experienced lawyers did not. Cheatle attributes this to the balance between the lawyer's experience and the complexity of the work undertaken. Feliciano (1984) administered a closed questionnaire to thirty lawyers in the Philippines in order to find, amongst other things, why they need information and which types of information they need. The vast majority of respondents claimed they needed information to provide specific information for work in progress, to provide introductory information needed for work in progress, to 'improve abilities' and to keep informed of work developments. Each of these needs was highlighted by at least 70% of respondents, indicating that these lawyers use information in order to satisfy a broad variety of needs. Published after Otiike's review of the literature, Haruna and Mabawonku (2001) administered a similar questionnaire to 361 lawyers in Lagos, Nigeria. The three highest ranking types of information sought were, 'the latest decisions of superior courts', knowing 'most recent legislation' and obtaining 'information on local and international seminars'. Hainsworth (1992) also found that the age of a judge did not influence whether he or she might use electronic legal resources. She found that some younger judges, even at the

age of forty, did not have a tendency to use electronic resources, whilst some older judges used them frequently. Otike (1999) herself conducted semi-structured interviews with nine academic lawyers (law teachers and researchers) and twenty-four practicing lawyers (mostly solicitors), all based in London and the East Midlands. These lawyers varied in age and legal experience. Otike asked questions surrounding which types of information the lawyers require to meet their needs, the reasons prompting them to seek information, where they seek information from and the factors that influence their information needs and seeking habits. The common reason for delegation was due to 'insufficient time' available for research. Delegation of research was common among practicing lawyers, but less popular amongst academic lawyers. And she found that lawyers varied greatly in their use of information. She found that frequency of information use varied depending on the type of work the lawyer undertook and the experience that they had in their particular work role and legal area. She also found that practicing lawyers did not consult information as often as academic lawyers because practicing lawyers needs were found to be confined to a limited area and hence less information was required to satisfy those needs. Rather unsurprisingly, Otike found that lawyers' information needs were greatly influenced by the type of work that they do. She found that practicing lawyers undertook the work roles identified by Leckie et al. (1996) of advocacy, drafting, counseling and managing, whilst academic lawyers undertook work roles involving teaching, research and consultancy. Regarding types of information required, Otike found a split between the need for detailed and researched information (usually obtained from law journals, law reports or textbooks) and brief, factual information (obtained from a variety of sources including statutes, case summaries or digests). Some lawyers were found to use both types of information. Otike found that much of this information was obtained through internal sources, most of which were paper-based. Obtaining information from information sources such as colleagues, personal contacts, or at seminars or conferences was also popular. Cole and Kuhlthau (2000) conducted a study in Montreal and New Jersey. They interviewed one group of lawyers at the beginning of their career and compared their concept of task, information and information-seeking with another group of lawyers who had practiced a specific branch of law for over seven years. Cole and Kuhlthau found that lawyers at the beginning of their careers tended to treat problem recognition and solution separately, regarding the information required to form a legal case as objective or 'fact like.' Lawyers further on in their careers tended to conceptualise possible solutions to problems whilst conceptualising the problem. They also found that an early conceptualisation of possible 'solutions' to a case or client problem enabled the 'expert' lawyers to add value to the information they collect. The concept of 'value added' led Cole and Kuhlthau to define legal information-seeking as *"a process of constructing new knowledge and understandings to add value to an enterprise (i.e. a client, jury or judge)"* (p.111). The authors suggest that if systems designers view legal information-seeking in this light, this might lead to the implementation of mechanisms and systems to support legal information-seeking at each stage of the value adding process. Kuhlthau and

Tama (2001) studied lawyers' information-seeking behaviour, with a particular focus on the variety of information tasks that lawyers undertake, how they use information to accomplish their work and the role that mediators play in the process of legal information-seeking and use. The authors found that lawyers' work included both routine tasks (such as dealing with matters that were settled out of court and did not require extensive pre-trial or trial preparation) and complex tasks (which involved preparing a case for trial). Complex tasks were described as being accomplished in stages, moving from fact gathering to defining the theory of a case, to resolving the matter through trial. Participants described 'figuring out a strategy' for a complex case, viewing the task as 'a puzzle to unravel' where they were likely to be aware of a missing slot to fill, but not necessarily of what will fill it (due to facts and evidence that are not readily apparent on the surface). Kuhlthau and Tama found that lawyers used sources of information in different ways throughout the process. Initially sources provided overview and background knowledge. They then served the purpose of helping them construct a theory or strategy in the case. The lawyers completed their work when they determined they had used sufficient information to create a persuasive presentation in court. Many of the participants indicated a strong preference for paper over electronic sources of information. Several participants also attributed it to the need to have specific keywords in mind when querying electronic resources. Kuhlthau and Tama's findings highlight an interesting question—why did these eight lawyers still prefer to use paper-based sources over electronic resources in the twenty-first century? The evidence above suggests the answer may be related to usability. A book is immediately usable. It is easy to browse tables of contents and indexes to find relevant sections and equally easy to follow references to other books. These were points echoed by participants of our own study of lawyers' information behaviour even though, in general, use of electronic legal resources was widespread amongst both the academic and practicing lawyers that took part. Leckie et al. (1996) highlight that professionals play many distinct roles throughout any given day, not only those concerning the provision of expertise and knowledge related to their domains, but other more general roles such as managing, counseling, supervising, planning etc. According to Leckie et al., these roles result in distinct types of activities which in turn shape the type of information needed, the way in which it is retrieved and the ultimate use of that information. Wilkinson (2001) applied Leckie et al.'s model by investigating the information-seeking behaviour of 154 practicing lawyers in Ontario, Canada. Wilkinson found that the problems split into two categories: problems related to the administration of law practice (client instructions, errors and omissions, conflicts of interest, communications, relations with other lawyers, representing the clients and the administration of the law practice directly) and problems involving substantive areas of law (administrative law, immigration, corporate and commercial practice, civil and criminal litigation, family law, wills and trusts or real estate). Kerins, Madden and Fulton (2004) applied Leckie et al.'s model to an academic (as opposed to professional) context. They conducted an empirical study with twelve postgraduate Irish law students and found 'similar patterns' in the information-

seeking behaviour of students studying to become professionals that Leckie et al. (1996) found in their study of professional lawyers (although the precise details of what makes these patterns 'similar' to the work by Leckie et al. remains unclear). Whilst these studies surrounding Leckie et al.'s model provide an insight into lawyers' work, the model itself is highly abstract in nature as it is aimed at "[capturing] the complexity of the information-seeking activities of professionals" (p. 187). This means that the model is not suitable for predicting or describing lawyers' information-seeking behaviour in detail and we regard it more as a broad framework than as an information-seeking model. This is, in effect, how Leckie et al.'s work has been subsequently used by Wilkinson (2001) and Kerins et al. (2004)—as a framework for organising the insights they have gained from observing academic and practicing lawyers looking for information. Komlodi and Soergel (2002) also focused on information use and re-use, specifically legal information seekers' use of their memory and externally recorded search histories to inform their later searches. Komlodi and Soergel found, like Kuhlthau and Tama (2001) and Blomberg et al. (1996) that during the legal research process, law students not only needed to consult electronic legal resources, but also to return to their personal research files. Komlodi and Soergel developed a set of search-history-based user interface tools to support the recording, categorisation and annotation of search results. This was achieved through the system keeping track of user actions and results in an electronic resource and using this expanded history to encourage easier information reuse and future search tasks. This work led to an (albeit limited) form of search histories being incorporated into the Westlaw electronic legal resource. Marshall et al. (2001) also conducted an information-use related study that involved observing a group of law students prepare for Moot Court (a pretend legal trial). During these observations, Marshall et al. identified the continued importance and authority of books in students' legal research process. Often paper-based sources were used alongside electronic sources. They also found that many of the users' information-seeking strategies involved following links rather than conducting explicit searches. Finally, they highlighted the utility of using electronic resources for case evaluation. Marshall et al. noted that students began their Moot Court research by identifying key cases, described as a 'launching pad' or 'looking for a thread to pull.' The students then continued to use citations as a point of departure, either as obvious links to a precedent if they came across the citation several times or as a way of determining whether the cases are still 'good law' (i.e. whether they have been overturned, cited more recently or are sufficiently authoritative). Marshall et al. fed their insights into the design of an e-book prototype, which acted as a wireless access device to electronic information resources and supported a wide range of lawyers' reading-related activities such as annotation. Sutton (1994) describes how attorneys build a mental model while searching for information. He criticizes earlier studies for defining relevance as pure topicality. He steps back and defines relevance for legal research as a first step in evaluating legal information. He characterizes relevance as law constructed and maintained by attorneys: "A relevant case is one that plays some cognitive role in the structuring of a legal argument." Sutton's

definition of relevance in the legal information field builds on the event space of the case, placing other similar cases in this space. Sutton describes legal practitioners' development of cognitive maps of law as having three levels: (1) base-level modeling of the contours of the event space; (2) context-sensitive exploration of the space and populating the relevant subsector; (3) disambiguating the subsequent model. He also describes these levels in terms of information-seeking activities, sources, and tools used. The first level is often accomplished through training, and learning about the general issues of an area of the law. The second level, "context-sensitive exploration", focuses on a particular issue, how the legal principle has been applied to the facts of the reported case. The third level describes the process of disambiguation among the results retrieved by the attorney's searches. In this process, cases in the event space are evaluated based on their juristic status and treated according to their status. If their jurisdiction does not require their use in the attorney's litigation, they are removed or their influence diminished. The cases are separated (their subsequent history checked to see whether they were challenged, upheld, or overturned) in order to examine their current status, and the results of this are also taken into consideration when deciding the impact of each case. At the end of this process the mental model is finalized for the time being. Sutton remarks that the three processes are going on in parallel in real-life information-seeking situations. The mental model building described in this paper focuses on the second and third levels, in which the attorney starts out with a picture of the legal area, explores the conceptual space with the help of this model, updates the model and then uses it to judge new results and update it with new information found.

Jones (2006) conducted Contextual Inquiry observations of eight students and an instructor working in an academic U.S. Legal Aid Clinic. She analyzed transcripts and videotapes of the lawyers working with clients and examined the lawyers' LexisNexis and Westlaw search logs and documents produced, with the long-term aim of feeding these findings into the design of a system to support legal information-seeking and use. Her preliminary findings were that these lawyers relied heavily on collaboration (in this case contacting practicing attorneys for assistance and advice) and on knowledge management activities involving locating and looking over documents in a client file. She found that although these documents were rarely annotated, detailed memos were produced when conversations were had with outside experts. Jones concluded that *"extensive collaboration and a heavy reliance on informal sources of information such as listservs and the advice of local experts allowed the students to cope with complex cases which evolved over time"* (p. 358). She suggested that future systems designed to support lawyers in a legal aid clinic such as this should focus on the social nature of legal research by acting as online repositories that facilitate the sharing, annotation and tagging of documents so that they can be located more easily. These studies all serve to illustrate the approach of gaining an understanding of lawyers and their work in order to inform the design of interactive systems to support this work. This is an

approach which closely mirrors our own (although in our case, our empirical study of lawyers information behaviour feeds into the design of two *methods* to support the evaluation and subsequent re-design of electronic legal resources rather than into the design of an electronic tool). These studies also serve to illustrate that lawyers' information behaviour constitutes more than just their information seeking activities (but also their information use and re-use activities). This suggests the possibility of taking a holistic approach towards examining the full range of lawyers' information behaviour, not just their information-seeking behaviour.

In India, Chowdhury (2013) studied 580 legal professionals (includes Advocates, Judges and Law Teachers) of West Bengal to discover the uncovered characteristics of their information behaviour by deploying Sense-Making Methodology. The research study focused on how legal professionals seek and use information in answering questions they have in mind, in the course of carrying out their professional activities and assisting along with making sense of what they found. The findings of the situational analysis provide evidence for arguing that information behaviour of the legal professionals of India can be identified by studying situations, gaps and uses of different means/sources for bridging gaps. Findings of the study become useful in determining the degree of dependence on the varieties of traditional and digital sources of legal information and this, in turn, help in developing need based and purpose-oriented legal information systems and services. The study revealed that Law libraries suffer from paucity of fund and lack of trained professionals. Majority of legal professionals gives importance on the quality of information products of services not the cost. Development of legal information system in India is the need of the hour. While it is true that not every aspect of this information system is too poor, but it cannot be denied that their performance is not up to the optimum level of satisfaction. It calls for an organized approach in integrating the existing legal information support facilities.

Conclusions

A few studies of information needs and information seeking behaviour of legal professionals particularly of lawyers, law students and law faculty members have been conducted outside India and only one such study has been undertaken in India in general and West Bengal in particular. Study of legal information systems, information behaviour of specific group namely Judges, Advocates and Law Teachers and also court specific information system are the areas that can be given importance for future investigation.

References

1. Cheattle, E. (1992). *Information Needs of Solicitors*. Unpublished M. Sc. Thesis, City University, London, UK.
2. Chowdhury, K. K. (2013). *Study of Information Behaviour of the Legal Professionals In West Bengal using Sense-Making Approach*. Unpublished Ph. D. Thesis, University of Kalyani, Kalyani, West Bengal, India.
3. Cole, C. & Kuhlthau, C. (2000). *Information and information seeking of novice*

- versus expert lawyers how experts add value. *New Review of Information Behaviour Research*. 1, 103-115.
4. Elliott, M. & Kling, R. (1996). Organizational Usability of Digital Libraries in the Courts. In *proceedings of the 29th Annual Hawaii International Conference on System Sciences* (pp. 62-71). Hawaii, USA.
 5. Feliclan, M. (1984). Legal Information Sources, Services and Needs of Lawyers. *Journal of Philippine Librarianship*. 8(12), 71-92.
 6. Hainsworth, M. (1992). *Information Seeking Behavior of Judges of the Florida District Courts of Appeal*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1367308 on 03.10.2009.
 7. Haruna, I. & Mabawonku, I. (2001). Information Needs and Seeking Behaviour of Legal Practitioners and the Challenges to Law Libraries in Lagos, Nigeria. *The International Information and Library Review*. 33(1), 69-87.
 8. Haruna, I. & Mabawonku, I. (2001). Information Needs and Seeking Behaviour of Legal Practitioners and the Challenges to Law Libraries in Lagos, Nigeria. *The International Information and Library Review*. 33(1), 69-87.
 9. Heltz, T. et al. (1979). Serving judges and the courts: organizations which deliver education training and library service to judges and court administrators. *Law Library Journal*. 72 (4), 628-644.
 10. Jones, Y. P. (2006). Just the facts Ma'am?: A contextual approach to the legal information use environment, In *Proceedings of Conference on Designing Interactive Systems*, 357.
 11. Kerins, G., Madden, R. & Fulton, C. (2004). Information-Seeking and Students Studying for Professional Careers: The Cases of Engineering and Law Students in Ireland. *Information Research*. 10(1), paper 208. Available online: <http://InformationR.net/ir/10-1/paper208.html>. Retrieved on 07.01.2009.
 12. Kidd, D. (1978). *Legal Information of Solicitors in Private Practice*. Unpublished M.Sc. Thesis, University of Edinburgh, UK.
 13. Komlodi, A. & Soergel, D. (2002). Attorneys Interacting with Legal Information Systems: Tools for Mental Model Building and Task Integration. In *proceedings of the 65th Annual Meeting of American Society for Information Science and Technology*, 152-163.
 14. Kuhlthau, C. C. & Tama, S. L. (2001). Information search process of lawyers: a call for 'just for me' information services. *Journal of Documentation*. 57(1), 25-43.
 15. Leckle, G., Pettigrew, K. & Sylvain, C. (1996). Modelling the Information-seeking of Professionals: A General Model Derived from Research on Engineers, Health Care Professionals, and Lawyers. *Library Quarterly*. 66(2), 161-193.
 16. Majid, S. & Kassim, G. M. (2000). Information seeking behaviour of International Islamic University Malaysia law faculty members. *Malaysian Journal of Library and Information Science*. 5(2), 1-17.
 17. Makni, S. (2008). Studying Academic Lawyers' Information Seeking to Inform the Design of Digital Law Libraries retrieved from <http://eprints.ucl.ac.uk/14729/1/14729.pdf> on 10.08 2010.
 18. Marshall, C. C. et al. (2001). Designing E-books for legal research. In *Proceedings of ACM/IEEE-CS Joint Conference on Digital Libraries*. 41.
 19. Otiike, J. (1999). The Information Needs and Seeking Habits of Lawyers in England: A Pilot Study. *International Information and Library Review*. 31, 19-39.

20. Oulanov, A. & Pajarillo, E. (2003). Academic Librarians' Perception of Lexis Nexis. *The Electronic Library*. 21(2), 123-129.
21. Pettigrew, K. E. et al. (2001). Conceptual frameworks In Information behaviour. *Annual Review of Information Science and Technology*. 35, 43-78.
22. Sutton, S. A. (1994). The role of attorney mental models of law in case relevance determinations: An exploratory analysis. *Journal of the American Society for Information Science*. 45(3), 186-200.
23. Tait, D. (1998). Judges and jukeboxes: sentencing Information systems in the court room. *International Journal of Law and Information Technology*, 6 (2), 167-189.
24. Vollaro, A.J. & Hawkins, D.T. (1986). End-user searching in a large library network: a case study of patent Attorneys. *Online*. July, 67.
25. Wilkinson, M. A. (2001). Information sources used by lawyers in problem-solving: an empirical exploration. *Library and Information Science Research*. 23(3), 257-276.
26. Wilson, T.D. (1997). Information behavior: an interdisciplinary perspective. *Information Processing and Management*, 33(4), 551-572.
27. Yuan, W. (1997). End-user searching behavior in Information retrieval: A longitudinal study *Journal of the American Society for Information Science*. 48, 218.

DISASTER MANAGEMENT APPROACHES FOR SOCIAL SCIENCE RESEARCH LIBRARIES AT KOLKATA: A SURVEY

BASANA DAS AND ARABINDA MAITY

Abstract : Disaster is an event or series of events which seriously disrupts normal activities. It can strike anywhere, anytime and cause havoc to lives of people and property. Disaster management is very important for any library. Good disaster management can help to prevent events such as these happening; and, if they should happen, help to minimize their effects. Library and information academics and professionals should feel concern about the issue of risks and disasters that threaten libraries and information services due to a wide number of man-made and natural causes. This work shall provide an overview of the most important approaches to disaster management. It also stress the urgent need for an effective formal disaster management implementation within Kolkata Social Science research libraries, in order to improve the level of preparedness for potential hazardous events.

Keywords : Disaster management, preparedness, Mitigation, Prevention and Risk reduction.

1. Introduction:

The word "Disaster" derives from the Latin words "dis" and "aster" meaning "apart" and "star". The current use of the word reflects the notion of an unlucky star and is "anything that befalls of ruinous or distressing nature; a sudden or great misfortune, mishap, or misadventure; a calamity." A disaster is an overwhelming ecological disruption occurring on a scale sufficient to require outside assistance. Disasters are of two type 1. Natural disaster (example—earthquakes, floods, landslides, storms, tsunami, drought, fire etc.) and 2. Man-made disaster (example—technological, chemical, wear and tear, theft etc.) Disaster management is the discipline of dealing with and avoiding risks. It is a discipline that involves preparing, supporting, and rebuilding society when natural or human-made disasters occur.

A disaster can be anything or event which directly or indirectly affects the normal administration of the library i.e. the disruption of services to readers on either a short-time or a long-time basis. This is different from the normal nature of events that are termed or described as disasters. Natural events like earthquakes, flood, and volcanic eruption are termed disaster because of the effects they have on human beings as well as their normal way of occurrence. Also, man-made events like fire, acts of war and terrorism, structural (building) deficiencies and chemical spills are termed disaster; because of their effects on materials and properties of the library. However, criminal acts, like book theft and mutilation are also termed as physical disasters.

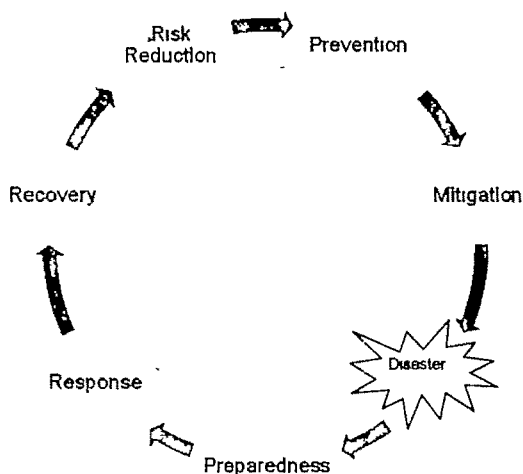
Library and information academics and professionals are concerned about

the issue of risks and disasters that threaten libraries and information services due to a wide number of man-made and natural causes. This work shall provide an overview of the most important approaches to disaster management. It also stress the urgent need for an effective formal disaster management implementation within Kolkata Social Science research libraries, in order to improve the level of preparedness for potential hazardous events.

Documents are very important which are stored in library. If the libraries lost a piece of art, a manuscript forever during a disaster, whose second copy is not available. This loss never be calculated in terms of money. Buildings can be built again, computers, equipment can be purchased but pieces of art, literature cannot be produced again, if lost forever. So the library should have a policy that protects the rare art, literary works by keeping copies at off site locations or by making multiple copies of them.

2. Components of Disaster Management

Disaster management activity comprises certain key components as indicated in the Figure below:



A graphic representation of the Phases in Disaster Management

Prevention : avoiding and reduce the chances of disaster, usually the impact and damage of disaster.

Preparedness : plans or preparations made to save lives or property, and help the response and rescue service operations. This phase covers implementation/ operation, early warning systems and capacity building so the population will react appropriately when an early warning is issued.

Mitigation : any activity that reduces either the chance of a hazard taking place or a hazard turning into disaster. Examples: building codes and zoning; vulnerability analyses; public education

Risk reduction : anticipatory measures and actions that seek to avoid future risks as a result of a disaster.

Response : include actions taken to save lives and prevent property damage, and to preserve the environment during emergencies or disasters. The response phase is the implementation of action plans.

Recovery : include actions that assist a community to return to a sense of normalcy after a disaster.

3. Objectives of the Study

The objectives of the study are the following:

- a) to find out the disaster management system available in the library of Institute of Development Studies Kolkata (IDSK);
- b) to find out the disaster management system available in the library of Centre for Studies in Social Sciences Calcutta (CSSSC);
- c) to find out the disaster management system available in the Central Library of the Anthropological Survey of India (the Central library of ASI);
- d) to make a comparative study regarding disaster management of these institutions;
- e) to find out the different problems regarding disaster management faced by the Social Science Research Libraries in Kolkata, and
- f) to give the probable suggestions for solving the problems.

4. Importance of the Study

In any research library documents can be expensive and rare including print, manuscripts and e-resources. Of course, it is a fact that saving human life is the first priority but, in addition, the library should get priority to be saved in case of a disaster. Because disasters are generally unexpected events with destructive consequences to a collections. These have been increasing in frequency and intensity over the past few decades and also in recent years. The primary reason for this is the fact that human settlements and activities are interfering with natural systems, and populations are being increasingly exposed to hazards. So disaster management is very important for any library. Good disaster management can help to prevent events such as these happening; and, if they should happen, help to minimize their effects. It makes the staff awareness of the various disasters possible in a library, prevention procedures, training in disaster management. Therefore it is vital for any library to take every possible precautions to prevent the occurrence of an unavoidable disaster to protect people (user, employee etc.), materials, systems, equipments and building; reduce possibility of disaster and effect if a disaster happens; expedite response and recovery efforts in an organized and systematic manner and raise the awareness of all staff regarding everyday safety and security issues. After a disaster, local officials and relief workers will be on the scene,

but they cannot reach everyone immediately. We could get help in hours, or it may take days. So we should be aware and prepared to cope with the emergency until help arrives. Disaster management needs to be carefully considered and properly planned, and all staff needs to be made aware of the various risks to the items in their care and what is expected of them in a disaster situation.

5. Scope & Coverage of the Study

The three Social Science Institution libraries situated in Kolkata are covered in this study. These are

- a) The Central library of Anthropological Survey of India (ASI libraries)
- b) The Institute of Development Studies Kolkata (IDSK), Salt Lake Campus
- c) Centre for Studies In Social Sciences, Calcutta (CSSSC).

6. Methods used :

The field survey method will be chosen using combination of techniques like questionnaire, interviews and participant observation. For evaluation purpose parametric/standard be formed to get the required information properly. Later on, a comparison be also made by putting the variables and objectives among the libraries studies in this work. By personally meeting with the librarians or In-charge of the social science institution libraries, the data will be collected and then the data will be tabulated and analyzed accordingly with the help of the statistical appliances such as chart, diagram etc.

7. Comparative study regarding disaster management of the three Social Science Research Libraries

Table-1 : Information about Building In the Social Science Research Libraries

Name the Library	Shape of the Building	No. of Emergency Doors	No. of Entry & Exit Points	Width Entry & Exit	No. of Stairs Case	Width of Stairs Case
CSSSC	Square	3	2	25ft	3	5ft
IDSK	Square	2	2	6ft	2	4 & 6ft
ASI	Square	2	2	6ft & 10ft	2	8 & 6 ft

The table 1 shows that the shape of the library of Centre for Studies In Social Sciences, Calcutta (CSSSC) is square. It has 3 emergency doors and 2 Entry & Exit Points whose width is 25ft; 3 stairs case whose width is 5ft. The shape of the library of the IDSK is also square. It has 2 emergency doors and 2 Entry & Exit Points whose width is 6ft; 2 stairs case whose width is 4ft and 6ft. The shape of the Central library of ASI is square. It has 2 emergency doors and 2 Entry & Exit Points whose width is 6ft and 10ft; 2 stairs case whose width is 8ft and 6ft.

Table-2 : Precautions taken for Protecting the Different Aspects of Disaster in the Social Science Research Libraries

	CSSSC			IDSK			ASI		
	Yes	No	Don't Know	Yes	No	Don't Know	Yes	No	Don't Know
Follow local Building codes for earthquake resistant construction	✓	—	—	✓	—	—	✓	—	—
Large overhangs	—	✓	—	—	✓	—	—	✓	—
Gap between the stairs & library room	—	✓	—	✓	—	—	✓	—	—
Regular inspections of building and equipment	—	—	✓	✓	—	—	—	—	✓
Earthquake recovery plan	—	—	✓	—	—	✓	—	—	✓
Check for fires and other damages	—	—	✓	✓	—	—	✓	—	—
Shut down electric mains switches, gas etc.	✓	—	—	✓	—	—	✓	—	—
Whether Regular Preservation & Conservation done or not	✓	—	—	✓	—	—	✓	—	—

Table 2 shows that the library building of the CSSSC, IDSK and ASI follow local building codes for earthquake resistant construction. They have no large overhangs in any floor in the building. There is no gap between the stairs case & library room in the library of CSSSC but in the building of IDSK, there is a gap between the stairs case & library room. In the building of ASI, there is a gap between the stairs & library room and in the gap, there are 8 shelves whose height is 8 ft each and the shelves are with binding journals. These shelves are not attached with wall and in front of the gate, there are new arrival display racks and deposit of property racks. They have an electrician and a contractor who check buildings and equipments regularly. During disaster, the staff shut down electric mains, switches and pulls out the plugs. All rare collections and valuable documents such as Insurance policies, Reports, list of Clientele(s) & staff etc. are stored in the separate area of these three libraries which are protected from fire. These libraries also take necessary steps for preservation.

Table-3 : Availability of systems for fire In the Social Science Research libraries

Systems	CSSSC	IDSK	ASI
Heat and smoke detectors	—	—	—
Audible alarms signals	—	✓	—
Pull or break-glass-style alarms	—	✓	—
Sprinkler systems	✓	✓	—
Access points to building (Fire Brigade)	✓	✓	—
Store and supply of water for Fire Brigade	✓	✓	—
Operational Fire extinguishers	✓	✓	✓
Operational smoke and monoxide detectors	—	—	—

Table 3 shows the availability of systems for fire in the Social Science Research libraries. The library of CSSSC has been taken different protection system from fire such as sprinkler system and has operational fire extinguishers. It has access points for entering the fire brigade to the building and also can supply the water whenever necessary. Different protection systems from fire such as sprinkler systems pull or break-glass-style alarms and also operational fire extinguishers have been taken for the library of IDSK. It has access points for entering the fire brigade to the building and also can supply the water whenever necessary. The Central library of ASI has operational fire extinguishers only. So the library should be installed sprinkler system, pull or break-glass-style alarms, heat and smoke detectors, audible alarms signals, and operational smoke and monoxide detectors.

Table-4 : Different awareness programmes conducted by the Social Science Research libraries

Different Programmes	CSSSC	IDSK	ASI
Fire extinguisher use	✓	✓	✓
Automated external defibrillator	—	—	—
Emergency Preparedness	—	—	—
First aid	✓	✓	✓
Building evacuation	✓	✓	—

Table 4 shows different awareness programmes conducted by the Social Science Research libraries. The library of CSSSC conducted different awareness programme such as fire extinguisher use, first aid and building evacuation and both the staff professional and non professional are attend the programmes. The library of IDSK and the Central library of ASI has operational fire extinguishers and conducted different awareness programme such as fire

extinguisher use, first aid and building evacuation and both the staff professional and non-professional attend the programmes.

Table-5 : Distribution of fire extinguishers in the Social Science Research libraries

Name of the library	Operational the fire extinguishers	Operate persons	Changing date of last cartage	Next Refill date	Material	No. of reservoirs	Quantity of water	Total Fire extinguisher
CSSSC	4	5	10.08.12	9.08.13	Dry powder, Water CO ₂ , Gas	3	500 gallon each	28
IDSK	3	2	2009	-	Same	1	1500 gallon	32
ASI	6	4	20.06.11	19.6.12	Same	1	1000 gallon	45

The table 5 shows that the library of CSSSC has 28 fire extinguishers. Out of which 4 are readily available per day which has operated by 5 Staff. Changing date of last cartage is 10.08.12 and next refill date is 9.08.2013. The date of last cartage is not expired. The cartage is stored with dry powder, water CO₂, gas etc. In the CSSSC, there is one reservoir which contained 1500 gallon of water and also has a generator. The library of IDSK has 32 fire extinguishers. Out of which 3 are readily available per day which has operated by 2 Staff. Changing date of last cartage is 2009. The cartage is stored with dry powder, water CO₂, gas etc. In the IDSK, there is one reservoir which contained 1500 gallon of water and also has a generator. The library of ASI has 45 fire extinguishers. Out of which 6 are readily available per day which has operated by 4 Staff. Changing date of last cartage is 20.06.2011 and next refill date is 19.6.2012. The date of last cartage is not expired. The cartage is stored with dry powder, water CO₂, gas etc. In the ASI, there is one reservoir which contained 1000 gallon of water and also has a generator.

Table-6 : Distribution of disaster occurred in the Social Science Research libraries during last 10 years

	CSSSC	IDSK	ASI
Extreme cold / Snow / Frost	—	—	—
Heavy rain / Hail / Floods	✓	—	—
Fire	—	—	✓
Strong wind / Tornado	✓	—	✓
Infrastructural damage	—	—	—

The table 6 shows the distribution of disaster occurred in the Social Science Research libraries during last 10 years. The library of CSSSC has faced heavy rain and strong wind but the library was not seriously affected. The library of IDSK does not face any disaster. The Central library of ASI faced fire due to short circuits which was damaged some collection of the library and also strong wind / Tornado which was not damaged the library.

Table-7 : Precautions taken for protecting the different aspects of disaster in the Social Science Research libraries

	CSSSC			IDSK			ASI		
	Yes	No	Don't Know	Yes	No	Don't Know	Yes	No	Don't Know
a copy of an emergency telephone tree with contact information and detailed Instructions	✓	—	—	✓	—	—	✓	—	—
Store Library Data backups off-site regularly	✓	—	—	✓	—	—	✓	—	—
Buildings, collections and equipment's covered by Insurance	✓	—	—	✓	—	—	—	✓	—
Attach furniture, pictures, mirrors, shelves and light fixtures to the walls or the floor by calm	—	✓	—	—	✓	—	—	✓	—
Digitize valuable, rare and/or Important Items	✓	—	—	✓	—	—	✓	—	—
Should maintain a record of all disasters happening, their frequency and consequences	—	✓	—	—	✓	—	✓	—	—
Has the library any anti theft systems	—	✓	—	✓	—	—	—	✓	—
Use signs to alert and communicate with patrons and other offices	✓	—	—	✓	—	—	—	✓	—
Budget allocation	—	—	—	—	✓	—	—	✓	—
Installed Lightning arrester	✓	—	—	✓	—	—	✓	—	—

Table 7 shows different precautions have been taken for protecting the different aspects of disaster in the Social Science Research Libraries. A list of library staff members was prepared along with their telephone numbers who stayed in the campus and would be available during day and night in case of any emergency. Computer systems, software and files must be backed-up wherever possible. Duplicate copies of software and files also stored off-site. This work has done by the Assistant Librarian of CSSSC, IDSK and ASI. The library building, collection and the equipments of CSSSC and IDSK have also been insured. Both libraries get discount from Insurance Company, because both libraries installed Sprinkler systems. But the library building, collection and the equipment of ASI has not insured. All furniture, **pictures, mirrors, shelves and light fixtures are not** attached to the walls or the floor by calm of CSSSC, IDSK and ASI. In these three libraries, there was no proper prevention from theft. During any disaster, the staff shut down electric mains, Switches and pulls out the plugs. The directional signs to alert and communicate with patrons and others are used in the library. The three libraries have been installed lightning rods which will carry the electrical charge of lightning bolts safely to the ground, greatly reducing the chance of a lightning-induced fire.

Table-8 : Availability of Disaster kits In the Social Science Research Libraries

Disaster Kits	CSSSC	IDSK	ASI
Face masks	✓	—	—
Rubber boots	—	—	—
Plastic gloves/sheets	✓	✓	—
Flashlights	✓	✓	—
Batteries	✓	—	—
Weather radios	—	—	—
Mike	✓	—	—
Generator	✓	✓	✓
Fire blankets	✓	—	—

Table 8 shows the availability of disaster kits in the Social Science Research libraries. The library of Centre for Studies in Social Sciences, Calcutta (CSSSC) has different type of disaster kits such as face masks, plastic gloves, flashlights, batteries, mike and generator and fire blankets etc, IDSK library has plastic gloves, flashlights and generator but the Central library of ASI has only generator and the library should keep face masks, plastic gloves, flashlights, batteries, mike and generator and fire blankets etc.

Table-9 : Distribution of different aspects of disaster management for which the three different libraries prepared the plan

Items	CSSSC	IDSK	ASI
Building collapse	✓	✓	—
Book worm	✓	✓	—
Faulty lightning system	—	✓	✓
Gas leak	—	✓	—
Fire	✓	✓	✓
Terrorist activities	—	—	—
Sabotage	—	—	—
Electrical Circuits	✓	✓	✓
Leaking water pipes	—	—	—
Air conditioning system	✓	✓	✓
Burst heating pipes	—	—	—
Theft	✓	✓	—
Vandalism	—	—	—
Paper decay	✓	✓	—
Insect raids	—	—	—
Cyclone Threat	—	—	—
Collapse of shelving in the library	✓	✓	—

Table 9 shows the distribution of different aspects of disaster management for which the three different libraries prepared the plan. The library of Centre for Studies in Social Sciences, Calcutta (CSSSC) has a disaster plan which included different aspects of disaster management such as building collapse, faulty lightning system, gas leak, book worm, fire, electrical circuits, air conditioning system, theft, paper decay, collapse of shelving in the library etc. Other possible causes of disasters in the library of IDSK include building collapse, book worm, fire, electrical circuits, air conditioning system, theft, paper decay, collapse of shelving and the Central library of ASI also include building collapse, book worm, fire, electrical circuits, air conditioning system, theft, paper decay, collapse of shelving etc.

8. Problems regarding disaster management faced by three Social Science Research libraries at Kolkata.

8.1 Different problems in the Central library of ASI

- i. In the building, there is a gap between the stairs case & library room and in the gap, there are 8 shelves whose height is 8 ft each and the shelves are with binding journals. These shelves are not attached with wall and

in front of the gate, there are new arrival display racks and depository of property racks. So if any disaster will be happened then all racks fall down and closed the entry and exit point.

- ii. The windows of the library are covered by glass.
- iii. It does not use any directional signs to communicate patrons, staff and others.
- iv. The building of the Central library of ASI is not equipped with a Sprinkler system or fire alarm and has only fire extinguishers to protect fire.
- v. No such Fire drills training methods were present in the ASI library.
- vi. It has only Fire extinguisher which operates in Silent Drill mode.
- vii. The electrical wiring system is not good condition.
- viii. The library building, collection and the equipments of ASI has not Insured.
- ix. All furniture, **pictures, mirrors, shelves and light fixtures are not** attached to the walls or the floor by calm.
- x. In these three libraries, there was no proper prevention from theft.
- xi. It conducted the different training programme occasionally.

The Central library of ASI faced fire due to short circuits which was damaged some collection of the library. The fire brigade used the water to put off fire which could cause enormous damage in its collection. So it could not take action to fight the disaster immediately.

Of course, it is a fact that saving human life is the first priority but, in addition, the library should get priority to be saved in case of a disaster.

8.2 Different problems in the library of IDSK

- i. In the building, there is a gap between the stairs case & library room. But the entry and exit point should be clear.
- ii. The canteen is situated on the 5th floor in the building.
- iii. Absence of training to face the risks among the staff and patrons.
- iv. It conducted the different training programme occasionally.
- v. In case of emergency, the staff and patrons do not respond promptly.
- vi. Lack of unity among the staff of libraries.
- vii. They are not aware about the changing date of cartage.
- viii. Negligence is giving priorities set for emergency response.

8.3 Different problems in the library of CSSSC

- i. The library of CSSSC has faced heavy rain and strong wind. The windows of building are covered by glass. So some glass of windows has been broken by strong wind.
- ii. The stack rooms are situated on the ground floor and the books of stacks
- iii. In case of emergency, the staff and patrons do not respond promptly.
- iv. Lack of unity among the staff of libraries.

- v. Delayed action to fight the disaster.
- vi. Lack of planning at all levels, lack of mitigation planning,

9. Conclusion

The library of CSSSC has been taken different measure to protect earthquake and fire but they are not aware about flood. The library of IDSK has been taken essential measure to protect library from different disaster. But the Central library of ASI has also different protection systems such as portable fire extinguishers, fire prove doors etc. Libraries and information centres should be taken practical measures to minimize the risk of disaster and be prepared to react quickly and effectively if a disaster occurs.

10. Suggestions

10.1 Suggestions for the Central library of ASI

- It is being recommended that there should be an emergency exit clearly with directional signs showing members of staff where to pass in order to avoid confusion and stampede. So the entry and exit point should be clear.
- There is the need for the library to install fire detector, water sensing alarm and more portable fire extinguishers as well as regular maintenance of drainage and plumbing system. There should be a regular building inspection so as to remedy the factors which constitute potential hazards.
- The library should mark, clearly, fire escape routes and exits and also hold regular fire drills to practice emergency procedures.
- The fire extinguishers should be checked at regular intervals, while the agency staff should be shown where to locate them and demonstrate how to use them.
- Short-circuit must be prevented from destroying the whole library. So it should be install the Automatic fire sprinkler system and more extinguishers. So the electrical wiring system should be changed and separate main switch should be established in each floor of the building which should be on in the working hours and off after office hours regularly.
- The library should have comprehensive insurance scheme over the library and its contents so as to reduce and share the possible risk of loss.
- All furniture, pictures, mirrors, shelves and light fixtures should be attached to the walls or the floor by calm.
- Sunlight should be prevented from falling directly on papers because the sun is a great emitter of ultraviolet rays. The windows must be provided with colour curtains, which will prevent falling of direct light as well as absorb ultraviolet rays. Lemon yellow or green coloured glass panes should be fitted in window panes as these are more effective in blocking ultraviolet rays. It is extremely good to fit acrylic plastic sheet in the panes of window because it filters out UV rays to a greater extent than coloured glass. The windows should be covered by wood or Fiber.

- There was no proper prevention from theft. For checking thefts, CCTV has been installed in the library and daily recordings are made.
- Library staff should be given training in different types of treatments with which the wet books can be saved.
- There should be clear and concise notices pasted at very strategic areas in the library showing how occupants (staff, patrons and visitors) should react to disasters when they strike.
- Disaster management tips should be incorporated into the orientation programmes which are usually organized for new staff and patrons.
- Preventive procedures should be the part of maintenance program of the library.
- Special precautions should be taken during usual period of increased risk such as building renovation.
- Use of match stick or open flame and smoking should strictly prohibited inside the library. Inflammable materials and chemicals should not be stored inside the stacks.
- The telephone number of the fire office should be visibly and clearly exhibited.
- The library should constitute a disaster management team/committee, which will not only serve as disaster monitor within the library but also as a liaison between the library and the agencies concerned with disaster management in the community so as to be in constant touch.
- The electrical defects and faults should be set right in time.
- Do not use the lift but take stair case to reach in open place.
- As high humidity and high temperature are more hazardous for library materials it is advisable to maintain ideal room temperature (200-250c) and relative humidity of (RH 45-55%) for preservation of documents.
- Libraries should maintain a record of all disasters happening, their frequency and consequences.
- Maintain cooperation with local police and fire fighting station.

10.2 Suggestions for the library of IDSK

Fire extinguishers should be checked and staff members have to be trained in handling the equipments in case of emergency. The changing date of last cartage was 2009. It should be changed the cartage properly. It should be installed the heat and smoke detector system inside the building because the canteen is situated on the 5th floor in the building. There was no proper prevention from theft. For checking thefts, CCTV has been installed in the library and daily recordings are made. Do not use the lift but should take stair case to reach in open place. The library should have comprehensive insurance scheme over the library and its contents so as to reduce and share the possible risk of loss. All furniture, pictures, mirrors, shelves and light fixtures should be attached to the walls or the floor by calm. Sunlight should be prevented from falling directly

on papers because the sun is a great emitter of ultraviolet rays. The windows must be provided with colour curtains, which will prevent falling of direct light as well as absorb ultraviolet rays. Lemon yellow or green coloured glass panes should be fitted in window panes as these are more effective in blocking ultraviolet rays. It is extremely good to fit acrylic plastic sheet in the panes of window because it filters out UV rays to a greater extent than coloured glass. The windows should be covered by wood or Fiber. There should be clear and concise notices pasted at very strategic areas in the library showing how occupants (staff, patrons and visitors) should react to disasters when they strike. Disaster management tips should be incorporated into the orientation programmes which are usually organized for new staff and patrons. Preventive procedures should be the part of maintenance program of the library. Special precautions should be taken during usual period of increased risk such as building renovation. Use of match stick or open flame and smoking should strictly prohibit inside the library. Inflammable materials and chemicals should not be stored inside the stacks. The telephone number of the fire office should be visibly and clearly exhibited. The library should constitute a disaster management team/committee, which will not only serve as disaster monitor within the library but also as a liaison between the library and the agencies concerned with disaster management in the community so as to be in constant touch.

10.3 Suggestions for the library of CSSSC

- The layout of the library building should be such that ground floor does not have any valuable reading material that can be lost in floods—particularly in floods prone area.
- There should be clear and concise notices pasted at very strategic areas in the library showing how occupants (staff, patrons and visitors) should react to disasters when they strike. It should not use the glass, should be used the wooden cover.
- It is being recommended that there should be an emergency exit clearly with directional signs showing members of staff where to pass in order to avoid confusion and stampede. So the entry and exit point should be clear.
- There is the need for the library to install fire detector, water sensing alarm and more portable fire extinguishers as well as regular maintenance of drainage and plumbing system. There should be a regular building inspection so as to remedy the factors which constitute potential hazards.
- The library should mark, clearly, fire escape routes and exits and also hold regular fire drills to practice emergency procedures.
- The fire extinguishers should be checked at regular intervals, while the agency staff should be shown where to locate them and demonstrate how to use them.
- Short-circuit must be prevented from destroying the whole library. So it should be install the Automatic fire sprinkler system and more extinguishers. So the electrical wiring system should be changed and separate main

switch should be established in each floor of the building which should be on in the working hours and off after office hours regularly.

- The library should have comprehensive insurance scheme over the library and its contents so as to reduce and share the possible risk of loss.
- All furniture, **pictures, mirrors, shelves and light fixtures** should be attached to the walls or the floor by calm.
- Sunlight should be prevented from falling directly on papers because the sun is a great emitter of ultraviolet rays. The windows must be provided with colored curtains, which will prevent falling of direct light as well as absorb ultraviolet rays. Lemon yellow or green coloured glass panes should be fitted in window panes as these are more effective in blocking ultraviolet rays. It is extremely good to fit acrylic plastic sheet in the panes of window because it filters out UV rays to a greater extent than coloured glass. The windows should be covered by wood or Fiber.
- There was no proper prevention from theft. For checking thefts, CCTV has been installed in the library and daily recordings are made.
- Library staff should be given training in different types of treatments with which the wet books can be saved.
- There should be clear and concise notices pasted at very strategic areas in the library showing how occupants (staff, patrons and visitors) should react to disasters when they strike.
- Disaster management tips should be incorporated into the orientation programmes which are usually organized for new staff and patrons.
- Preventive procedures should be the part of maintenance program of the library.
- Special precautions should be taken during usual period of increased risk such as building renovation.
- Use of match stick or open flame and smoking should be strictly prohibited inside the library. Inflammable materials and chemicals should not be stored inside the stacks.
- The telephone number of the fire office should be visibly and clearly exhibited.
- The library should constitute a disaster management team/committee, which will not only serve as disaster monitor within the library but also as a liaison between the library and the agencies concerned with disaster management in the community so as to be in constant touch.
- The electrical defects and faults should be set right in time.
- Do not use the lift but take stair case to reach in open place.
- As high humidity and high temperature are more hazardous for library materials it is advisable to maintain ideal room temperature (20-25°C) and relative humidity of (RH 45-55%) for preservation of documents.

- The library and information science curriculum also needs to be modified keeping in view the importance of disaster management for library and information centres, because libraries world over act as service agencies and librarians as service and information handling managers.

References

- Bhattacharyya Sahu, N. & Pradhan, S. (2011). Disaster management in libraries: response and recovery operations. *CUJIS*, 13, 205-220.
- Corrigan, A. (2008). Disaster: response and recovery at a major research library in New Orleans. *Library Management*, 29 (4/5), 293-306.
- Eden, P, Feather, J & Matthews, G. (1994). Preservation and library management. *Library Management*, 15(4), 5-11.
- Kaur, T. (2009). Disaster planning in university libraries in India: a neglected area. *New Library World*, 110(3/4), 175-87.
- Matthews, G. and Eden, P. (1996). Disaster management training in libraries. *Library Review*, 45(1), 30-8.
- Muir, A. and Shenton, S. (2002). If the worst happens: the use and effectiveness of disaster plans in libraries and archives. *Library Management*, 23(3), 115-23.
- Owens, B M & Brown-Syed, C (1998). Not in our stars: the University of Windsor Archives and Library Disaster Plan. *Library and Archival Security*, 14(2), 61-66.
- Shaheen, M. A. (2008). Earthquake effects on educational institutions and libraries of Azad Kashmir: an appraisal. *Library Review*, 57 (6), 449-456.
- Yujiro, O. (1991). Disaster prevention in records management in Japan. *Records Management Journal*, 3(2), 43-46.

INFORMATION NEEDS OF PATIAL COMMUNITY AT NADIRPARA, DHALUABARI VILLAGE OF COOCHBEHAR DISTRICT : A STUDY

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Abstract : Information is an important element of every sectors of our society especially for the development of socio-economic condition. This study presents a clear picture regarding the information need of Patials at Nadirpara, Dhaluabari Village of Coochbehar District. Moreover the study attempts to determine, identify and analyse the information seeking behaviour of Patials. On the basis of the findings some suggestions are made.

Keywords : Patial Community, Nadirpara, Dhaluabari, Coochbehar

1. Introduction:

The world around us changes drastically in the last few decades. Application of information and communication technology virtually changes the way of our life style in almost every aspect. In this environment, the information need of the common people is quite complex in nature but the basic information need of the professionals have become more critical than ever before. Information need is one of the most important aspects for determining the needs of the people belonging to the lower strata. Of the many types of information need, expressed need and unexpressed need are very much common. Information need is very much crucial for the overall development of the community. West Bengal is a state where varied kinds of professionals of different community exist in the different areas of North Bengal. In most cases tracing out their unexpressed information need is quite difficult task.

Sitalpati, a kind of mat, is perhaps the most notable and popular product among the Handicrafts of Coochbehar. In Coochbehar-I block villages like Ghughumari, Dhaluabari, Gangaler Kuthi, Hawagari, Pushnadanga, Gheghirghat and Panigram are famous for manufacturing of Pati (mat). The word Sitalpati means cool-mat. The raw material is Muta Cane (*Maranta dichotoma*). The persons engaged in making Sitalpati is locally called as 'Patials'. The Patials are residents in the different areas of Coochbehar but mostly found in the Coochbehar-I block. These Patials, who live in the areas of Coochbehar, migrated from Bangladesh. The Patials are engaged in this profession for several years and generation after generation. The children of the Patial family gradually know about the procedure of Sitalpati making without having any proper guidance and training and thus involved in the procedure of making Sitalpati.

With the passage of time, the Patials are facing several problems related to their work and standard of life. The work of the Patials is tedious and time consuming. The demands of the Sitalpati also decrease with the rapid increase of mattresses. Besides these, people other than Patial family are quite frequently coming into this profession as there is no need of large investment

In this profession. The traditional Patials are facing different problems to cope up with the present trends and demand of the society. Lack of funds, unavailability of proper marketing facilities, lack of knowledge about the new trends of Sitalpati craft are some of the most common problems faced by the Patials of Coochbehar district.

2. Objectives of the Study:

The main purpose of the work is to identify an in-depth study of the Information requirements of the Patial community in the Sitalpati industries. The major objectives of this study are as follows:

- i) To draw complete picture of socio-economic status of the Patial community,
- ii) To find out their requirements of Information on various segments like education, occupation, training etc.
- iii) To find out Information requirements on raw materials and on business and trade.
- iv) To study information awareness on medical health treatment facilities.
- v) To study information requirement about finance like banking system,
- vi) To suggest the possible ways to uplift the socio-economic status of the Patial community.

3. Review of Literatures

Dhar and Lydall (1961) studied on the data collected from Census of Indian Manufactures, 1956 and the study prepared by the Perspective Planning Division of the Planning Commission in respect of capital, labour and output relations in various industries. They concluded that the issue of choice between large and small industries for the purpose of an employment-oriented industrialization strategy is largely irrelevant, and it should aim at making the best use of scarce resources, instead of aiming at creating employment for the sake of employment.

The National Committee on Science and Technology report on Khadi and Village Industries (1975) gave a gloomy picture of these industries as a source of employment in industrialization. The report showed that the compounded rates of growth of employment in these industries, as compared to growth of output, were very meager.

Dasgupta (1983) recommended the establishment of small scale and cottage industries in the North-eastern region of the country. He suggested that if labour intensive small scale industries are established, they will provide some alternative economic opportunities to the people in the hill areas of the region as the improved cultivation with multiple cropping was difficult proposition in this area.

Williamson (1986) described a study of community information needs and information seeking behaviour. An important aim was to investigate the responses information seekers prefer from an information provider. The study was carried out at Moorabbin Citizens Advice and Aid Bureau during 1982.

Fairer and Felicite (1987) discussed about socioeconomically disadvantaged urban black women who experience community information needs to a greater extent in a society where their traditional communication networks were no longer relevant and that they need information to survive. It described the problems and indicated methods of research. It examined the role of the librarian and the implementation of a community information service in serving this disadvantaged group.

Agarwal (1988) emphasized that the importance of small scale and cottage industries was more in the absence of large and medium industries in the North-eastern region. He mentioned some of the specific exogenous factors leading to bad industrial health in the region. These were absence of effective industrial policy and ad-hocism in Government decision at the state level as well as industry wise decisions, prolongation of gestation period due to infrastructure deficiencies and weakness of supporting services, uncertainties and shortage of essential raw material and construction material supplies, defective sales tax regulations, high power tariffs and transportation costs etc, defective capital base and operational plans, shortage of working capital, non-availability of trained and experienced personnel and old techniques of production and lack of quality control.

Swiegelaar (1989) discussed about the various aspects of development which will require consideration in determining an information policy, and the need for libraries to be able to determine the specific information needs of the communities they serve; the ability of the public library to serve the information needs of local authorities; and of the unique and specific nature of information needs.

Alatoa (1992) raised the question as to whether information workers in the Pacific Region were aware of the need of the people whose information needs they were attempting to meet. It considered whether they fully appreciate their needs for traditional community information.

Legoabe and Boon (1992) defined the information needs and communication channels of people. It described the information needs of urban black people in South Africa. It also explained where information is obtained and the problems they have in finding information. It referred to the situation in Mamelodi.

Seriki (1994) described a study of the information needs of the Ibillo rural community in Edo State, Nigeria who were largely engaged in cassava production. The study revealed that the community's information needs centred around cassava farming techniques, improved cassava varieties, marketing strategies and crop production management. Made recommendations for the provision of the required information for rural development and suggests that Nigerian library schools should integrate courses on rural librarianship into their curricula.

Baron (1995) stated that many rural libraries have inadequate numbers of staff, and many others had staffs which were seriously undereducated to meet

the expanded information needs of the people in their communities. If rural libraries were to seize the available opportunities, they must develop services to support them, and market these to a wider range of citizens in their communities, and they must invest in the intellectual capital of their staff. The benefits which technology promises for rural people to access information and education could also be the key for developing rural public library staff to provide those resources and services.

Christensen, Broadway and Garbutt (1995) described and presented the results of a survey undertaken to identify the information needs and problems of health care professionals in American Fork, Utah, a rural community of about 16,000 residents. The survey findings were presented and discussed focusing on 4 areas: information needs of health care professionals; primary sources of information; attitude towards the public library; and perceived information needs of patients. Although the health care professionals did not believe the public library could meet their own specialized information needs, they gave valuable insights into the information needs of patients which were useful for public library decision making.

Kanlkl (1995) discussed the results of an exploratory study conducted in 2 rural communities in South Africa: Kwa-Ngwanase in Natal and Qumbu in the Transkei. The study attempted to establish the information needs of the 2 communities, which information providers were used, and the demographic distribution of each community and its implication for information provision in these areas. Results for both hospital and public libraries were discussed and suggestions for further study indicated.

Oding (1995) identified some of the factors that hinder information use in Kenya as: the prevalence of inappropriate information systems; an unstimulating education system; high levels of illiteracy; and the language barrier. It made various recommendations for the stimulation of information use in the country, including paying more attention to the information needs of the user community and the communication process among each group of the user community. Challenges information experts in Kenya to conduct qualitative user surveys and research which would lead to the design of improved information systems.

Plenaar (1995) discussed the information needs in disadvantaged communities and the role of public libraries in disseminating survival information. The establishment of a survival information service required the following: planning the service; obtaining the approval of the relevant funding authorities; analysis of the community and information needs determination; the community profile; and the creation of a database. He discussed the implementation, marketing and evaluation of a survival information service.

Poller (1995) investigated the nature and suitability of multimedia for the purpose of satisfying the information needs of developing communities by means of an overview of the evolution of media and methods used for information transfer. He urged public librarians to adopt a proactive approach to the provision of value added information media and offers recommendations to this effect.

Winston (1995) drew out the fact that reference librarians interact with a broad range of customers and were expected to provide quality service to that clientele. In addition library collections and services should reflect the community served and meet at least a portion of the information needs of that community. As populations that reference librarians serve change and become more and more diverse, particularly in the case of those librarians who were serving academic communities, it was critical that the library environments that were created were conducive to the success of the populations served. As a result, librarians are compelled to become more culturally sensitive and to ensure that the library environment was open to all of those in the target population.

Amey (1997) examined the potential of the school housed public library (combination of a school library and a public library, normally based in school premises) to address the library and information needs of rural communities by using appropriate technology, whilst also providing a centre for social and cultural development.

Caron (1997) described the 3 groups and their objectives and discussed their activities and information needs which fall into the following categories: remaining abreast of developments; development, networking, organization and representation; innovation, action and mobilization; education, dissemination, communication; service provision; and finance and operations. Looking at the content of information in support of operations and deduces that the needs of the 3 groups to both access information and produce it had to be considered within the context of its everyday use.

Mall (1998) observed that small and medium enterprises (SMEs) and micro enterprises have to face increasing competition in the present scenario of globalization, they had to specifically improve themselves in the fields of management, marketing, product diversification, infrastructural development, technological upgradation. Moreover, new small and medium enterprises may have to move from slow growth area to the high growth area and they had to form strategic alliance with entrepreneurs of neighbouring countries. Data bank on industries to guide the prospective entrepreneurs including investors from abroad is also needed.

Mercer and Wotherspoon (1998) discussed results of a questionnaire survey, conducted among UK rural communities, to examine the current information needs of users in these communities, their difficulties in obtaining information and to assess the acceptability of information provision through information technology. The study concluded that there was a currently a much greater awareness of the information needs of rural users, but that this awareness was stifled to some extent by factors regarded as being beyond the control of library authorities and others. Great reliance was being placed on the use of information technology to provide information to and within rural communities.

Ramesha (1999) examined the trends in credit supplied to small scale industries by Scheduled commercial Banks (SSBs) and the State Financial Corporations (SFCs) and their inter state disparities. The study found that

commercial banks continue to play a dominant role in financing small scale industrial sector.

Chakrabarti and Karan (1999-2000) analysed the goal, objectives, activities and information services provided by the Bio-Centres of M.S. Swaminathan Research Foundation. They also found that the Bio-Centres had truly designed activated for health, education and agriculture related information needs of the disadvantaged community in and around Villianur Village

Tikekar (2000) explained the Indian public library system and a formal structure of libraries available in the country. It stated the objectives of the public library emphasizing the need for public libraries in rural areas of India. It discussed the role of the Raja Rammohun Roy Library Foundation in the development of public libraries and the strategy of developing libraries in the USA to meet community information needs. It also suggests a new strategy to develop rural libraries in India as community information centres.

Westbrook (2000) explained that the benefits of a community information needs analysis were as important as the associated costs. Little can be done to lower the costs, but a great deal can be done to increase the benefits. A holistic approach—as opposed to the traditional management directed approach—was more likely to lead to a meaningful, well implemented change because staff and community were invested in the outcome and the research process focuses on both immediate and long range planning requirements.

Chakrabarti (2001) discussed the information needs and information seeking behavior of Totos depending on various factors like psychological, social, cultural, historical, educational, economical etc.

Uhagbu (2001) discussed the impediments to rural information services for community development in Nigeria. It highlighted the nature and characteristics of a community as well as community information needs and services. Four components of community information were identified: the information itself; the sender, the medium or channel of communication; and the final user. Poor perception and deep-seated scepticism of rural areas towards information, the deplorable state of rural roads, nonchalance of government officials, and rivalry among the inhabitants of the communities were the major obstacles to community information service. It recommended, amongst other things, that traditional institutions and town development associations be effectively utilized to disseminate information to the people.

Bhattacharyya (2003) dealt with the primary source and the early history of the company and also the production organization consisting of many sections such as products, productive forces, process of production, production and cost of production. Moreover various aspects of the market viz. advertisement, salesman, distributions, contemporary observations, competition, extension of business, market potential and sale have been described by him.

Chattopadhyay and Chakrabarti (2003) observed the information needs of Solapith (Malakar) community and examined the effect of information obtained from information centers like public and rural library. The study also

dealt with the needs of educational information for their professional development.

Chakrabarti (2005) identified information needs of Dhibar community of Phakirala and Malopara specially relating to their economic aspect, education, health and occupation. He assessed the extent of access and exposure of information and evaluated the activities and effectiveness of community information service on the basis of their needs.

Rabha (2005) discussed about the language, culture, songs, and rituals of the Rabha community of North Bengal

Chakrabarti (2006) described that the socio economic development of any community, engaged in a specific occupation, largely depends upon the provision of occupational information and their access to it. It also denoted that the rural artisans were being deprived in society due to poor physical and information infrastructure in their region. It attempted to determine and identify the information seeking behaviour of Solapth community in a rural region of Burdwan district of West Bengal.

Chakrabarti and Kundu (2006) stated that most of the people engaged in cottage industries were very much depends on their traditional methods to gather their required information. They strongly desire to have an information centre or rural information centre though hardly have sufficient time. The study also had found that illiteracy was one of the obstacles for collecting their needed information.

Seth and Parida (2006) had covered the SC/ST students, researchers and faculty in the academic institutions of the eleven districts of Orissa to identify the information needs patterns of disadvantaged communities

Chakrabarti and others (2008) identified the information need of the Dukpa community of Lepcha-Kha who were basically non-users of the formal information system. It revealed the information needs of the villagers with their traditional information needs.

Mashreky and Others (2010) explored the health seeking behavior of Bangladeshi parents for their children during burn injuries.

Okello-Obura (2010) presented a study that was conducted to analyse the LIS postgraduate e-resources seeking behavior in Makerere University, Uganda and discuss specifically the problems of LIS postgraduate students were facing in accessing e-resources.

Sheeja (2010) presented comparative study of the information-seeking behavior of science and social science research scholars, including service effectiveness, satisfaction level on different type of sources and various methods adopted by the scholars for keeping up to date.

4. Geographical Description

4.1. Coochbehar

4.1.1. Location: Coochbehar district is a district of the state of West Bengal, India, as well as the district's namesake town. During the British Raj, the town

of Cooch Behar was the seat of a princely state of Koch Bihar, ruled by the Koch dynasty. As of 2011 it is the third least populous district of West Bengal (out of 19), after Dakshin Dinajpur and Darjeeling. Coochbehar is a district under the Jalpaiguri Division of the state of West Bengal. Cooch Behar is located in the northeastern part of the state and bounded by the district of Jalpaiguri in the north, state of Assam in the east and by Bangladesh in the west as well as in the south. The district forms part of the Himalayan Terai of West Bengal.

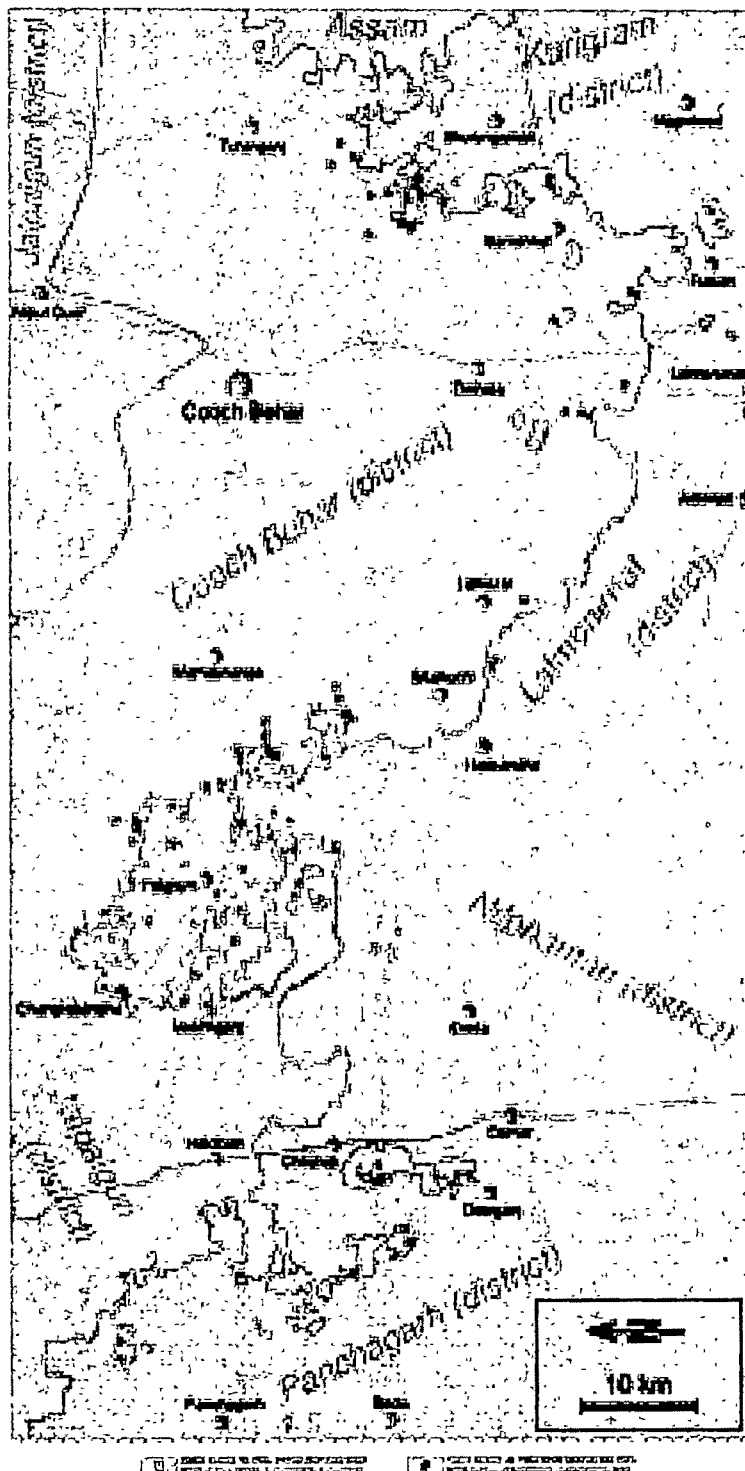
A geopolitical curiosity is that there are 92 Bangladeshi exclaves, with a total area of 47.7 km² in Cooch-Bihar. Similarly, there are 106 Indian exclaves inside Bangladesh, with a total area of 69.5 km². These were part of the high stake card or chess games centuries ago between two regional kings, the Raja of Coochbehar and the Maharaja of Rangpur. Twenty-one of the Bangladeshi exclaves are within Indian exclaves, and three of the Indian exclaves are within Bangladeshi exclaves. The largest Indian exclave, Balapara Khagrabari, surrounds a Bangladeshi exclave, Upanchowki Bhañi, which itself surrounds an Indian exclave called Dahala Khagrabari, of less than one hectare (link to external map here).

4.1.2. Demography: The district comprises five subdivisions: Cooch Behar Sadar, Dinhata, Mathabhanga, Mekhliganj and Tufanganj. Coochbehar Sadar consists of Cooch Behar municipality and two community development blocks: Coochbehar-I and Coochbehar-II. Dinhata subdivision consists of Dinhata Municipality and three community development blocks: Dinhata-I, Dinhata-II and Sitai. Mathabhanga subdivision consists of Mathabhanga Municipality and three community development blocks: Sitalkuchi, Mathabhanga-I and Mathabhanga-II. Mekhliganj subdivision consists of Mekhliganj municipality and Haldibari municipality and two community development blocks: Mekhliganj and Haldibari. Tufanganj subdivision consists of Tufanganj Municipality and two community development blocks: Tufanganj-I and Tufanganj-II. Cooch Behar is the district headquarters. There are 11 police stations, 12 development blocks, 6 Municipalities and 128 Gram Panchayats in this district.

Other than municipality area, each subdivision contains community development blocks which in turn are divided into rural areas and census towns. In total there are 10 urban units: 6 municipalities and 4 census towns. Coochbehar, Kharimala Khagrabari and Guriahati are part of an urban agglomeration. Dinhata and Bhangri Pratham Khanda also form an urban agglomeration together.

Coochbehar Sadar Subdivision

1. Coochbehar Municipality
2. Coochbehar-I (Community development block) consists of rural areas with 15 Gram panchayats and two census towns: Kharimala Khagrabari and Guriahati. Block headquarter is in Dhaluabari.
3. Coochbehar-II (Community development block) consists of rural areas with 13 Gram panchayats and one census town: Khagrabari. Block headquarter is in Pundibari.



Dinhata Subdivision

1. Dinhata Municipality
2. Dinhata-I (Community development block) consists of rural areas with 16 Gram panchayats and one census town: Bhangri Pratham Khanda. Block headquarter is in Dinhata.
3. Dinhata-II (Community development block) consists of rural areas only with 12 Gram panchayats. Block headquarter is in Sahebganj.
4. Sital (Community development block) consists of rural areas only with 5 Gram panchayats. Block headquarter is in Sital.

Mathabhanga Subdivision

1. Mathabhanga Municipality
2. Sitalkuchi (Community development block) consists of rural areas only with 8 Gram panchayats. Block headquarter is in Sitalkuchi.
3. Mathabhanga-I (Community development block) consists of rural areas only with 10 Gram panchayats. Block headquarter is in Sikarpur.
4. Mathabhanga-II (Community development block) consists of rural areas only with 19 Gram panchayats. Block headquarter is in Mathabhanga.

Mekhliganj Subdivision

1. Mekhliganj Municipality
2. Haldibari Municipality
3. Mekhliganj (Community development block) consists of rural areas only with 8 Gram panchayats. Block headquarter is in Changrabandha.
4. Haldibari (Community development block) consists of rural areas only with 6 Gram panchayats. Block headquarter is in Haldibari.

Tufanganj Subdivision

1. Tufanganj Municipality
2. Tufanganj-I (Community development block) consists of rural areas only with 14 Gram panchayats. Block headquarter is in Tufanganj.
3. Tufanganj-II (Community development block) consists of rural areas only with 11 Gram panchayats. Block headquarter is in Baxirhat.

Assembly constituencies : The district is divided into 9 assembly constituencies:

1. Mekhliganj (SC) (assembly constituency no. 1),
2. Sitalkuchi (SC) (assembly constituency no. 2),
3. Mathabhanga (SC) (assembly constituency no. 3),
4. Cooch Behar North (assembly constituency no. 4),
5. Cooch Behar West (assembly constituency no. 5),
6. Sital (assembly constituency no. 6),
7. Dinhata (assembly constituency no. 7),
8. Natabari (assembly constituency no. 8) and
9. Tufanganj (SC) (assembly constituency no. 9).

Mekliganj, Sitalkuchi, Mathabhanga and Tufanganj constituencies are reserved for Scheduled Castes (SC) candidates. Mekhliganj constituency is part of Jalpaiguri (Lok Sabha constituency), which also contains six assembly segments from Jalpaiguri district. Sitalkuchi, Mathabhanga, Cooch Behar North, Cooch Behar West, Sitai, Dinhata and Natabari constituencies form the Cooch Behar (Lok Sabha constituency), which is reserved for Scheduled Castes (SC). Tufanganj constituency is part of Alipurduars (Lok Sabha constituency), which also contains six assembly segments from Jalpaiguri district.

4.1.3. Climate : The district of Cooch Behar has a moderate type of climate characterised by heavy rainfall during the monsoon and slight rainfall in the month of October to mid-November. The district does not have high temperatures at any time of the year. The summer season is from April to May with April being the hottest month with mean daily maximum of 32.5°C and mean daily minimum of 20.2°C. The winter season lasts from late November to February, with January being the coldest month with temperature ranging from 10.4°C to 24.1°C. The recorded temperature minimum is 3.9°C and respective recorded maximum is 39.9°C. The atmosphere is highly humid throughout the year, except the period from February to May, when the relative humidity is as low as 50 to 70%. The rainy season lasts from June to September. The district's average annual rainfall is 3201 mm.

4.1.4. Flora & Fauna : The flora here includes among others palms, bamboos, creepers, ferns, orchids, aquatic plants, fungi, timber, grass, vegetable and fruit trees.

In absence of large forest area in the district, except at Patlakhawa, not many species of animal are found though there are many wildlife sanctuaries, national parks and animal reserves in the neighbouring Jalpaiguri district and Alipurduar subdivision of Jalpaiguri which are not very far from the district.

In 1976 Cooch Behar district became home to the Jaldapara Wildlife Sanctuary, which has an area of 217 km² (83.8 sq mi). It shares the park with Jalpaiguri district.

4.1.5. Education : Coochbehar is a district which is progressing well in education. The overall Literacy Rate (excluding 0-6 years population) is 67.98%. Following are some of the statistics regarding the educational infrastructure in education.

• Primary Schools	—	1905
• High Schools	—	340
• Higher Secondary Schools	—	135
• High Madrasa	—	5
• Senior Madrasa	—	2
• Junior High School	—	60
• Junior High Madrasa	—	16
• Kendriya Vidyalaya	—	1

• Engineering/Technical Schools	—	2
• Professional & Technical Schools	—	16
• General College	—	13
• Blind School	—	1
• Libraries	—	110
• No. of SSK	—	696
• No. of MSK	—	117

In Cooch Behar district there is an Agricultural University named Uttar Banga Krishi Viswavidyalaya at Pundibari about 15 km from Cooch Behar Town. Apart from the Government schools there are a few privately aided schools mostly ICSE, ISC and CBSE boards. The overall literacy statistics are given below :

Sl. No.	Type of Literacy	Male	Female
1.	Literacy Rate (67.98%)	77.41%	57.99%
2.	Rural Literacy Rate (66.41%)	76.24%	55.96%
3.	Urban Literacy Rate (82.60%)	88.54%	76.51%

4.1.6. Economy:

Agriculture: The agricultural area of Cooch Behar is 2530.63 square kilometers. The dominant agricultural products of Cooch Behar district are jute and tobacco. Paddy rice is also grown before and after the rainy season. Common plantation crops are arecanut, coconut and black pepper. Vegetable, mustard plant and potato cultivation are increasing. In order to support agriculture, special programs have been taken for the production of sunflowers, maize and groundnuts. Revolutionary methods are being used in Boro paddy and potato cultivation. But due to non-adoption of modern technology, a large number of farmers still depend on traditional technology. Only 33% of the potentially cultivable land is developed for irrigation. In Kharif, the area of production of vegetables and other crops is much less. The ovine breed in the region originates from Tibet and was brought to the plains of West Bengal by traders. The trade between Tibetan traders and traders from the plains of Bengal took place from the region. The sheep along with other items of trade were transported to a place known as Bhot Patti (situated in Maynaguri Block of Jalpaiguri District). The major trading occurred at a place known as Rangpur, situated now in Bangladesh. The goods were exchanged and the sheep were also taken to plains of Bengal by the returning traders, the animals were given to the farmers of Sunderban region for rearing and bringing them back to their health. The sheep were used for their meat by the Europeans during the colonial era. They preferred mutton over Chevon so sheep meat was in great demand. A single consignment of the sheep were transported to Australia in the late 18th century when the Australian colony was being settled. The consignment was shipped from the port of Fulta near Kolkata. However, the sheep were not preferred by the settlers as their size was small and wool quality too was inferior.

Almost 85-90% of the total population depends on agriculture. In spite of several obstacles like poor soil status, acidity, lack of irrigation facilities, adoption of new improved technologies, inclusion of different high yielding varieties and hybrid varieties through different on-going schemes like ATMA, NFSM, RKVY etc. the production and productivity of different crops are raising keeping pace with the increasing demand of population.

Industry : Industry is another strong area of economy in Cooch Behar. Following are some of the existing Agro based Industries in this area :

Agro-based Industries	Existing	Proposed
1. Cold Storage	5	—
2. Fruit Processing Unit	2	1
3. Jute Processing	2	3*
4. Oil Extraction	20	2
5. Mini Rice Mill/Paddy Husking	189	20

Cooch Behar, an Industrially Backward District, has undergone a tremendous growth in Industrial Development in last years. A sizable no. of Industries have been set up in the District which are not only quantitative but definitely qualitative. In fact the District has shown the highest growth amongst the Districts of North Bengal. A few units which are set up in the District are not only first of their type in North Bengal but some are of the first in the Eastern India. We have the most sophisticated Haldia Down Stream Projects in Cooch Behar. Units for Unconventional and Industrially used products are now being set up in the District. Cold Drawing Steel Plant, Casting Units, Modern Jute Mills are in operation/implementation in the District. As regards food processing units we have set up 3 mechanised bread units, and the biggest Fruit Processing unit have been commissioned in the District. Out of the 5 existing cold storages the capacity of two are being augmented and four unit cold storage are being implemented working on day-night basis to catch the ensuing harvesting season. What-so-more, Cooch Behar will be the first District to set up a few ultra modern Multi-purpose cold storages to be operative in near future.

Possibility of New Industries

Being the Agriculture based district, Cooch Behar produces a good quality of potato, jute, tomato, chilly, carrot, cabbage, peas, pineapple, etc. Presently we are having 10 nos. of Cold Storage (potato); 1 multi-purpose cold storage has also started its operation recently. The total rated capacity of those potato stores is 123017 MT.

1. Hence food processing Industries like manufacturing of chips, sauce, jam, jelly etc. have a very good potential.
2. The annual production of potato of this district is near about 55,000 MT and the production of chilly is about 52,000 MT annually. These surplus production are exported to outside the state upto U.P. & Delhi. Food

processing units preparing tomato & chilly based products like sauce, peuri, paste, pickles and dust can be set up here.

3. District production of Jute is about 5,17,000 bales. At present only 2 manufacturing units are operating and producing various jute based products. Since the availability of raw materials are there, many other manufacturing units can thus be set up for jute yarn dying & bleaching, jute mat, other jute diversified products, jute particle board etc.
4. The annual production of tobacco and potato are very high compared to the demand of the district. Hence there is scope for setting up of more multi-purpose cold storage for storing of surplus production.
5. There is ample demand for plastic products like PVC casing, plastic sheets, plastic toys, PVC pipes, moulded plastic items, etc. So plastic based manufacturing units have ample opportunities in this area.
6. Scope for Biodiesel : One unit namely M/s. Titagarh Blotec (P) Ltd., Kolkata has applied for 24 acres of land on long term settlement basis for starting a nursery for Jatropha plants. This plant is used for the manufacture of Biodiesel besides other things. It requires barren land and climatic environment for which this region suits best for its growth.

Handicrafts

Sitalpati : Sitalpati, a kind of mat, is perhaps the most notable and popular product among the handicrafts of Cooch Behar. Unlike other kinds of mat woven in Bengal, Sitalpati is more expensive. Barokodali, Ghughumari and Nakkati-Pushnadanga of Coochbehar district are the most important centers of Sitalpati. Besides this is also available in states of Tripura, Assam and in the neighboring country of Bangladesh.

The word 'Sital-pati' means cool-mat. The makers are usually Kayasthas in caste, not a traditional craftspeople caste. The raw material is the Mutra cane (*Maranta dichotoma*).

The green cane is kept soaking in water before it is slashed/sliced into thin strips for making the pati. Then the fine strips are woven by skillfully joining and interlacing to shape into beautiful mats.

The quality of the Sitalpati mat is judged by its glossiness, smoothness and fineness of texture. It is said that the best kind of Sitalpati is so smooth that even a snake cannot glide over it.

This particular quality of mat is particularly suited for the warm and humid climate of this part of West Bengal. Sitalpati mats render a feeling of coolness (thus rendering the name 'Sital' or 'Sheetal') to the person sitting or sleeping on it, and are intimately linked with everyday rural life. But besides being a rural craft, this is now available outside the rural hinterlands. The aesthetic appeal and utilitarian value of these mats have made them increasingly visible in large towns and metropolitan cities thus expanding their traditional market.

Madur : Among the numerous different varieties of mats woven and used,

the Madur mat—made from the "Madur Kathi" reed (*Cyperus Tegetum* and *C. Pangorie*) that grows in the swampy area is another widely used household item. The warp is cotton/jute thread and the weft is the madur kathi. Crafts of very fine textured mats made of carefully selected reeds with beautiful geometric designs are indeed pleasures to the eye.

Bamboo and Cane : Many varieties of Bamboo as well as cane are available in Cooch Behar. These are extensively used for handicrafts apart from building thatched houses in the rural areas.

Dhamas & Chalunis (netted-baskets/containers) of different sizes and shapes, made of whole or uncut bamboo/cane, are traditionally used extensively in the rural areas for the carrying, storing and measuring of grains. Apart from this Dhama work is now being adapted to various shapes for use by planters, fruit-sellers and bread-bakers.

Domestic items like fruit-trays, paper-baskets, bowls and home decorative like arm-chairs, sofa-chairs, low-seats (Morhas), table-mats, waste paper baskets, magazine racks & lot of decorative furniture are made out of cane/bamboo. Bamboo-crafts as above in the form of vase, bed-lamp.

Jute : Jute, a bio-degradable product, is grown almost all over West Bengal. Exquisite jute articles are made in Cooch Behar by the Polia and Rajbanshi tribals. Jute items come in a range of fascinating designs and sizes. Crafts Council of West Bengal has pioneered the craft of jute embroidery by training about 30 women under training programmes of Govt. of India and World Crafts Council. A range of items like table mats, bags, bottle holders and cushions covers are made using these intricate embroideries.

Kanthas : Kantha is an indigenous household craft, stitched by the rural women. It is also referred to as the thrift craft as it was usually done on layers of old cotton 'dhotis/sarees' with threads drawn out from the saree border for softness. These are then embroidered all over. Thereafter the beneath-side is covered by stitching single-coloured cloth for making it more durable in case of front-side Kanthas. More fine the embroidery, more is the sophistication effect. Hence the real value of Kantha embroidery lies in its fine craftsmanship and vignettes of daily folk life motifs being a favorite of the embroiderers. Nowadays it is usually commercially done on a single layer of new silk cloth using new thread, but the Crafts Council strictly adheres to the traditional three-layered quilting technique. Some of the popular Kantha pieces are stoles, bedspreads, wall hangings, cushion covers, napkins and beach bags.

Shola-pith : Shola-pith is a kind of very light pithy reed found in the marsh lands of Eastern India. The Craftsmen or 'malakars' work with their special iron knives or 'kath' to fashion intricate objects out of it.

The core of this reed, which is pure white in colour, is exposed when the outer layer of the stalk is shaved. The core is light, porous, soft, and pliable and can be shaped to suit the imagination of the artisan. Skilled craftsmen shape this reed into many objects: scaled down models of temples, churches and

mosques, carved images of Gods/Goddess (like Durga, Kali, Ganesh and so on), marriage headgear ("Topor" & "Mukut"), flowers and garlands, toys and mobiles are all crafted from this reed.

Apart from toys and images, big and small, some shola-pith craftsmen also create items that form an integral part of most of the major religious rituals—mainly in the form of "Solar Saaj"—which is the ornamentation and decoration for sacred images. This latter form uses foils, sequins, beads or artificial pearls mounted on cupboard. Since these foils were once used to be imported from Germany by post or 'dak' the decoration came to be known as "Daker Saaj".

5. Sitalpati Craft : An Overview

Location

Cooch Behar is essentially flat surface with a slight south-eastern slope along which the main rivers of the district flow. Most of the high lands appertain to Sitalkuchi area and most of the low lands lie in Dinhata area. The soil is alluvial nature as per very recent times. It is mostly sandy and loose. The surface soil is loam and hardly any good clay is found. The river flows in slanting force from north-west to south-east. Six river systems cut through the district flowing in south-eastern direction. The entire atmosphere makes the Sitalpati craft most viable.

About the Craft

Sitalpati, a kind of mat, is perhaps the most notable and popular product among the handicrafts of Cooch Behar. Unlike other kinds of mat woven in Bengal, Sitalpati is more expensive. In Cooch Behar-I block villages like Ghughumari, Dhaluabari, Gangaler Kuthi, Hawagari, Pushnadanga, Gheghirhat and Panigram are famous for manufacturing of Paati (mat). Baishguri, Pestarjhar, Nishiganj and some other villages are also known for this industry. Besides, Paati is also available in sates of Tripura, Assam and in the neighbouring country of Bangladesh.

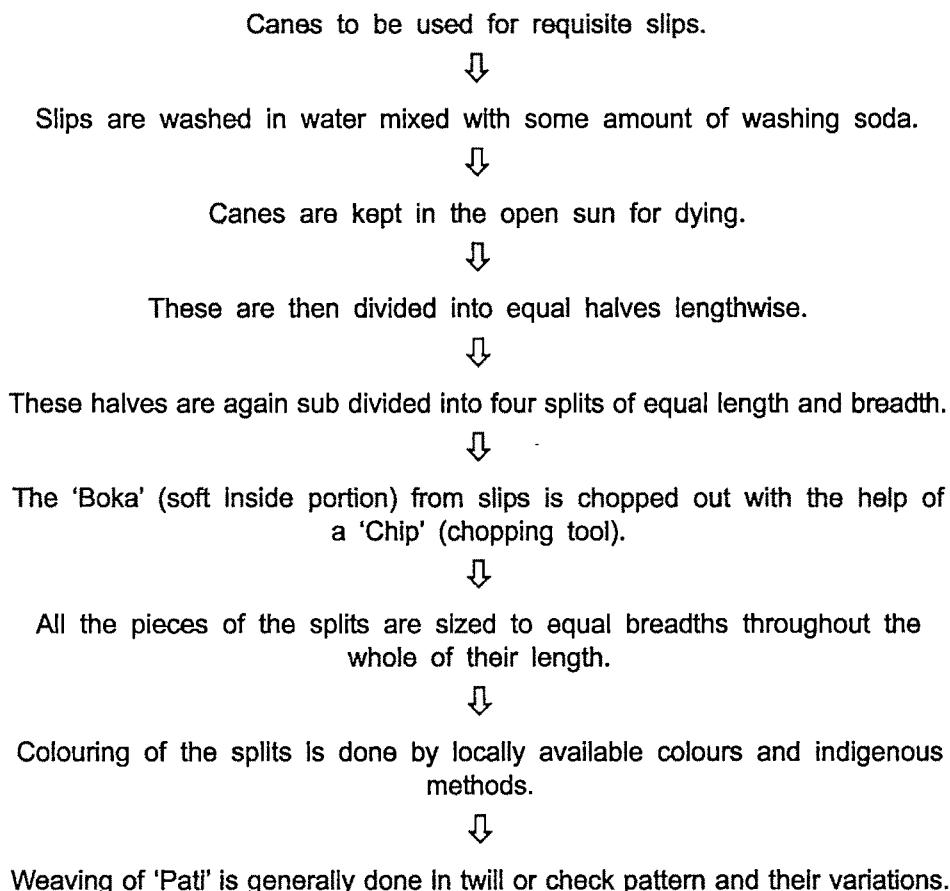
The word 'Sitalpati' means cool-mat. The makers are usually Kayasthas in caste. Most of the makers are mostly Hindus but people of other religion slowly coming into this profession. The raw material is Mutra Cane (*Maranta Dichotoma*). The green cane is kept soaking on water before it is sliced into thin strips for making the Pati. Then the fine strips are woven skilfully by joining and interlacing to shape into beautiful mats. The quality of Sitalpati is judged by its glossiness, smoothness and fineness of texture. It is said that particular quality of mat is particularly suited for the warm and humid climate of this part of West Bengal. Sitalpati mat render a feeling of coolness (thus rendering the 'Sital' or 'Sheetal') to the person sitting or sleeping on it and are intimately linked with everyday rural life. But besides being a rural craft, this is now available outside the rural hinterlands. The aesthetic appeal and utilitarian value of these mats have made them increasingly visible in large towns and metropolitan cities thus expanding their traditional market.

Procedure

The manufacturer of 'Sitalpati' involves many complicated processes. The most difficult part of it is the preparation of fine cane slips fit for 'Pati' weaving. First

of all, the canes to be used for obtaining requisite slips are washed in water mixed with some amount of washing soda. After washing, these canes are kept in the open sun for drying. These are then divided into equal halves lengthwise, with the help of a bill-hook. These divided halves are again sub divided into four splits of equal length and breadth and the 'Boka' (soft inside portion) from slips is chopped out with the help of a 'Chip'(chopping tool). The process is locally known as 'Aushani'(planning). The next operation is known as 'Nawkhani' in which all the pieces of splits are sized to equal breadths throughout the whole of their length. Weaving of 'Pati' is generally done in twill or check pattern with slight variations here and there. Colouring of the splits is done by indigenous methods. White (ivory) colour is obtained by boiling the splits in water, wherein other ingredients, such as 'Bhater Phen' (boiled rice juice), 'Amrapata'(Hibiscus Safdariffa) and Tamarind leaves are mixed. For black colour, the splits packed into bundles are wrapped up with mango barks and kept under the mud for about 7 days. In order to obtain red colour, the cane splits are boiled in water mixed with 'Mezenta'(a kind of chemical dye). Following is the flow chart for making of Sitalpati.

Flow Chart for Making of Sitalpati



6. Methodology

6.1. Scope and Coverage

The scope of this research work is to present information requirements of people belonging to the Patial community. Dhaluabari village consists of six areas, namely—Purbapara, Paschimpara, Madhyapara, Dakhsinpara, Dharapara and Nnadirpara. Out of these six areas, Nadirpara area has been chosen for the study.

The total population of that area is 908. Out of this, 513 are adult (277 male & 236 female) and 395 are child (222 male & 173 female).

This study was designed to focus on the Patial community residing in the Nadirpara of Dhullabari village under Panishala Gram Panchayet, Block-Cooch Behar-1, under the jurisdiction of Cooch Behar sadar subdivision, in the district of Cooch Behar, West Bengal, to identify their information requirements based on empirical data.

This work was concentrated on educational and occupational structure, economic and social conditions, health, religious aspect of Patial community at Nadirpara of Dhuliabari village under Panishala Gram Panchayet in the district of Cooch Behar.

6.2. Methods Used

To conduct this kind of descriptive research process, different techniques of survey method were incorporated such as, questionnaire method, interview method and observation method in this study. The questionnaire consisted both open and closed questions. The main objective of that unstructured questionnaire was to find out data on the basis of free flow conversation from which we can understand the Information requirements of the Patial community.

In regard to observation method, non participant observation method was followed to collect data on their information needs.

The complete research work was made after getting a preliminary report of the information requirements of the Patial community from a pilot survey of that community. On the basis of that pilot survey the final questionnaire was formed.

One hundred eighty (180) Patials were interviewed for this research work. Random sample was choosen for conducting this work. The Patials involved in this profession generation after generation were considered for this research work. The Patials were met personally and interviewed in Bengali language.

To conduct and complete this research work, several related literatures were searched and reviewed to get a proper understanding of the study. Data was arranged in tabular form. Finally, on the basis of interpretation, conclusion was made.

7. Findings and Discussion

Table-1 : Distribution of Population at Nadirpara, Dhaluabari

Population	Adult			Minor			Total (Adult+Minor)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Patial	244 26.87%	209 23.02%	453 49.89%	31 3.41%	16 1.76%	47 5.18%	275 30.29%	225 24.78%	500 55.67%
Non Patial	33 3.63%	27 2.97%	60 6.6%	191 21.03%	157 17.29%	348 38.33%	224 24.67%	184 20.26%	408 44.93%
Total	277 30.51%	236 25.99%	513 56.5%	222 24.45%	173 19.05%	395 43.50%	499 54.96%	409 45.04%	908 100%

Table 1 shows the distribution of population at Nadirpara, Dhaluabari. It found from the table that there was 908 persons. Out of total population 55.67% were Patials and 44.93% were Non-patials. Out of 500 patials 49.89% patials were in adult in which 26.87% were male and 209(23.02%) were female. On the other hand out of 408 non-respondents 3.63% were adult male persons, 2.97% were adult female persons, 21.03% were minor male, 17.29% were minor female persons.

So it is revealed from the above table that more than 50% people were patials and most of the patials were in minor stage.

Table-2 : Distribution of Respondents and Non-respondents according to Adult and Minor among Patials of Nadirpara, Dhaluabari

	Adult			Minor			Total (Adult+Minor)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Respon- dents	115 (23%)	56 (11.2%)	171 (34.2%)	5 (1%)	4 (0.8%)	9 (1.8%)	120 (24%)	60 (12%)	180 (36%)
Non- Respon- dents	129 (25.8%)	153 (37.4%)	307 (63.2%)	26 (5.2%)	12 (2.4%)	38 (7.6%)	155 (31%)	165 (33%)	320 (64%)
Total	244 (48.8%)	209 (41.8%)	453 (90.6%)	31 (6.2%)	16 (3.2%)	47 (9.4%)	275 (55%)	225 (45%)	500 (100%)

Table 2 shows the distribution of respondents and non-respondents among the adult and minor patials. From this table it is revealed that 36% persons were respondents out of which 23% were male adult, 11.2% were female adult and 1.8% were minor in which 1% were male and 0.8% were female. On the other hand out of 64% non-respondents 63.2% were adult in which 25.8% were male and 37.4% were female and 7.6% were minor in which 5.2% were male and 2.4% were female.

Table-3 : Distribution of respondents in respects of educational qualification under different age group

Age group	Just literate	Up to class iv	Up to class viii	Up to class x	Up to class xii	Up to graduation	Total literate	Total illiterate	Total
Up to 18	—	—	2(1.11%)	5(2.78%)	2(1.11%)	—	9(5%)	—	9(5%)
18-28	2(1.11%)	—	9(5%)	18(10%)	9(5%)	9(5%)	47(26.11%)	—	47(26.11%)
28-38	2(1.11%)	2(1.11%)	16(8.89%)	16(8.89%)	6(3.33%)	1(0.56%)	43(23.88%)	—	43(23.88%)
38-48	6(3.33%)	2(1.11%)	13(7.22%)	7(3.89%)	2(1.11%)	—	30(16.66%)	2(1.11%)	32(17.78%)
48-58	5(2.78%)	2(1.11%)	3(1.67%)	13(7.22%)	2(1.11%)	2(1.11%)	27(15%)	2(1.11%)	29(16.11%)
58 & above	6(3.33%)	—	2(1.11%)	2(1.11%)	—	—	10(5.56%)	10(5.56%)	20(11.11%)
Total	21(11.67%)	6(3.33%)	45(25%)	59(33.89%)	21(11.66%)	12(6.67%)	166(92.22%)	14(7.78%)	180(100%)

So it is found from the table that most of the respondents were male and only few respondents belonged to the minor group.

Table 3 shows the distribution of respondents according to their educational qualification under different age groups. There was 5% respondents under the age group of up to 18 years out of them 1.11% respondents were qualified up to class VIII, 2.78% respondents were qualified up to class X and 1.11% respondents were qualified up to class XII.

There was 26.11% respondents under the age group of 18-28 years out of them 1.11% respondents were just qualified, 5% respondents were up to class VIII, 10% respondents were qualified up to class X, 5% respondents were qualified up to class XII and 5% respondents were qualified up to graduation.

There was 26.11% respondents under the age group of (28-38) years out of them 1.11% respondents were just qualified, 1.11% respondents were upto class IV, 8.89% respondents were up to class VIII, 8.89% respondents were qualified up to class X, 3.3% respondents were qualified up to class XII, and 0.56% respondents were qualified up to graduation.

There was 17.78% respondents under the age group of (38-48) years out of them 3.33% respondents were just qualified, 1.11% respondents were upto class IV, 17.22% respondents were up to class VIII, 3.89 respondents were qualified up to class X, and 1.11% respondents were qualified up to class XII.

There was 16.11% respondents under the age group of (48-58) years out of them 2.78% respondents were just qualified, 1.11% respondents were upto class IV, 1.67% respondents were up to class VIII, 7.22% respondents were qualified up to class X, and 1.11% respondents were qualified up to class XII,

There was 11.11% respondents under the age group of 58 years and above out of them 3.3% respondents were just qualified, 1.11% respondents were up to class VIII, and 1.1% respondents were qualified up to class X.

In the above table we see that there was no respondents in the age group of above 58 years whose qualification were above class X and in the age group of up to 18 years there was no respondents whose qualification were below class IV in the sample population.

Table-4 : Distribution of respondents according to their monthly income on the basis of sex and age

Age Group	Below 500		500-1000		1000-2000		2000-5000		Above 5000		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Up to 18	2 (1.11%)	2 (1.11%)	2 (1.11%)	2 (1.11%)	—	—	1 (0.56%)	—	—	—	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	2 (1.11%)	—	3 (1.67%)	5 (2.78%)	2 (1.11%)	7 (3.89%)	20 (1.11%)	8 (4.44%)	—	—	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	—	—	—	3 (1.67%)	7 (3.89%)	6 (3.33%)	22 (12.23%)	3 (1.67%)	—	2 (1.11%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	—	—	2 (1.11%)	—	5 (2.78%)	3 (1.67%)	11 (6.11%)	6 (3.33%)	5 (2.78%)	—	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	—	—	3 (1.67%)	—	2 (1.11%)	—	15 (8.33%)	4 (2.22%)	5 (2.78%)	—	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	—	—	4 (2.22%)	—	2 (1.11%)	4 (2.22%)	3 (1.67%)	5 (2.78%)	2 (1.11%)	—	11 (6.11%)	9 (5%)	20 (11.11%)
Total	4 (2.22%)	2 (1.11%)	14 (7.78%)	10 (5.56%)	18 (10%)	20 (11.11%)	72 (40%)	26 (14.44%)	12 (6.67%)	2 (1.11%)	120 (66.6%)	60 (33.33%)	180 (100%)

Table 4 shows the distribution of respondents in respect of their monthly income. The table shows that there was 3.33% respondents whose monthly income were below Rs.500. Among them 2.22% were under the age group of below 18 years and 1.11% were under the group of (18-28) years.

Under the income level of Rs. 500 to Rs. 1000 there was 13.34% respondents out of them 42.22% were under the age group of up to 18 years, 4.45% were under the age group of (18-28) years, 1.67% were under the age group of (28-38) years, and 1.11%, 1.67%, 2.22% were respectively under the age group of (38-48) years, (48-58) years, and above 58 years.

Under the income group of Rs.1000 to Rs.2000 there was 38 respondents out of them 5% were under the age group of (18-28) years, 7.22% were under the age group of (28-38) years, 4.45% were under the age group of (38-48) years, and 1.11% were under the age group of (48-58) and 3.33% were under the age group of above 58 years.

Under the income level of Rs. 2000 to Rs. 5000 there was 98 respondents out of them only 0.56% were in the age group of below 18 years, 5.55% were under the age group of (18-28) years 13.90% were under the age group of (28-38) years, 9.44% were under the age group of (38-48) years, 10.55% were under the age group of (48-58) and 8(4.45) were under the age group of above 58 years.

Under the income level of above Rs.5000 there was 7.78% respondents out of them 0.56% were under the age group of (28-38) years, 2.78% were both under the age group of (38-48) years and (48-58) years and 1.11% were under the age group of above 58 years.

So from the above table we can say that out of 180 respondents 40% male respondents were in the age group of Rs. 2000 to Rs. 5000. There was no respondent under the age group of 18-28 years whose monthly income was above Rs. 5000.

Table-5 : Distribution of Respondents according to their Caste

Respondents	General	% of general	OBC	% of OBC	Total	% of Total
Male	41	22.78%	79	43.89%	120	66.67%
Female	20	11.11%	40	22.22%	60	33.33%
Total	61	33.89%	119	66.11%	180	100%

Table 5 shows the distribution of respondents according to their caste.

From the above table it is clear that there was 66.11% OBC respondents and 33.89% were from general caste.

So we can say that more than 60% respondents were OBC.

Table-6 : Distribution of Respondents according to Religion.

	Hindu			Muslim			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Respondents	120	58	178	-	2	2	120	60	180
Percentage	66.67%	32.22%	98.89%	-	1.11%	1.11%	66.67%	33.33%	100%

Table 6 shows the distribution of respondents according to their religion.

Out of 180 respondents 98.89% were Hindu in which 66.67% were male and 32.22% were female and 1.11% were female muslim persons.

So we can say that there was very small number of muslim Patials.

Table-7 : Distribution of Respondents having APL and BPL cards

Population	APL			BPL			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Respondents	72	42	114	48	18	66	120	60	180
Percentage	40%	23.33%	63.33%	26.67%	10%	36.67%	66.67	33.33	180

Table 7 shows the distribution of respondent having APL & BPL cards. It is find out that out of the 180 respondents 63.33% persons had APL card in which 40% were male and 23.33% were female and 36.67% persons had BPL card in which 26.67% were male and 10% were female.

From this table it is revealed that there was less than 40% people with BPL card in the sample population.

Table-8 : Distribution of respondents about the satisfaction of patial work

Age Group	Satisfied			Non-satisfied			Total (satisfied+ non-satisfied)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	5 (2.78%)	4 (2.22%)	9 (5%)	—	—	—	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	20 (11.11%)	20 (11.11%)	40 (22.22%)	7 (3.89%)	—	7 (3.89%)	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	23 (12.78%)	14 (7.78%)	37 (20.56%)	6 (3.33%)	—	6 (3.33%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	20 (11.11%)	7 (3.89%)	27 (15%)	3 (1.67%)	2 (1.11%)	5 (2.78%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	20 (11.11%)	2 (1.11%)	22 (12.22%)	5 (2.78%)	2 (1.11%)	7 (3.89%)	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	11 (6.11%)	9 (5%)	20 (11.11%)	—	—	—	11 (6.11%)	9 (5%)	20 (11.11%)
Total	99 (55%)	56 (31.11%)	155 (86.11%)	21 (11.67%)	4 (2.22%)	25 (12.89%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 8 shows the distribution of respondents according to their satisfaction regarding patial work under different age groups. There was 5% respondents under the age groups upto 18 years, who were all satisfied in their job.

In the age group of (18-28) years 26.11% respondents were there out of which 11.11% male and 11.11% female were satisfied in their job. On the other hand only 3.89% respondents were not satisfied in their job.

In the age group of (28-38) years there was 20.56% satisfied respondents in which 12.78% were male and 7.78% were female. And 3.33% male respondents were not satisfied in their job or work.

Under the age group of (38-48) years there was 15% satisfied respondents in which 11.11% were male and 3.89% were female. On the other side there was 2.78% non-satisfied respondents in which 1.67% were male and 1.11% were female.

Under the age group of (48-58) years there was 12.22% satisfied respondents out of which 11.11% were male and 1.11% were female. On the other side there was 3.89% non satisfied respondents in which 2.78% were male and 1.11% were female.

Under the age group of above 58 years there was only 11.11% respondents who were all satisfied in their job.

So from the above table It is revealed that out of 180 respondents 86.11% respondents were satisfied and 13.89% were not satisfied. There was no non-satisfied respondent in the age group of above 58 years.

Table-9 : Distribution of respondents according to their sources of capital

Age Group	Own sources			Loan			Both			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Upto 18	3 (1.67 %)	2 (1.11 %)	5 (2.78 %)	—	2 (1.11 %)	2 (1.11 %)	2 (1.11 %)	—	2 (1.11 %)	5 (2.78 %)	4 (2.22 %)	9 (5%)
18-28	22 (12.22 %)	15 (8.33 %)	37 (20.56 %)	2 (1.11 %)	2 (1.11 %)	4 (2.22 %)	3 (1.67 %)	3 (1.67 %)	6 (3.33 %)	27 (15%)	20 (11.11 %)	47 (26.11 %)
28-38	24 (13.33 %)	11 (6.11 %)	35 (19.44 %)	2 (1.11 %)	—	2 (1.11 %)	3 (1.67 %)	3 (1.67 %)	6 (3.33 %)	29 (16.11 %)	14 (7.78 %)	43 (23.89 %)
38-48	14 (7.78 %)	7 (3.89 %)	21 (11.67 %)	2 (1.11 %)	—	2 (1.11 %)	7 (3.89 %)	2 (1.11 %)	9 (5%)	23 (12.78 %)	9 (5%)	32 (17.78 %)
48-58	17 (9.44 %)	4 (2.22 %)	21 (11.67 %)	3 (1.67 %)	—	3 (1.67 %)	5 (2.78 %)	—	5 (2.78 %)	25 (13.8 %)	4 (2.22 %)	29 (16.11 %)
58 & above	8 (4.44 %)	9 (5%)	17 (9.44 %)	—	—	—	3 (1.67 %)	—	3 (1.67 %)	11 (6.11 %)	9 (5%)	20 (11.11 %)
Total	88 (48.89 %)	48 (26.67 %)	136 (75.56 %)	9 (5%)	4 (2.22 %)	13 (7.22 %)	23 (12.7 %)	8 (4.44 %)	31 (17.22 %)	120 (66.67 %)	60 (33.33 %)	180 (100 %)

Table 9 shows the distribution on of respondents according to their source of capital under the different age groups. There was 5% persons under the age group of upto 18 years out of which 2.78% respondents used own sources,1.11% respondents used loan sources and 1.11% respondents were using both sources as their sources of capital.

Under the age group of 18 years to 28 years there was 26.11% respondents in which 12.22% male and 8.33% female respondents used own sources,1.11% male respondents and 1.11% female respondents used loan sources and 1.6% male respondents and also 1.6% female respondents used both as their source of capital.

Under the age group of (28-38) years there was 23.89% persons in the sample population out of which 19.44% persons used own sources 1.11% persons used loan sources and 3.33% persons used own and loan sources.

Under the age group of 38-48 years there was 17.78% respondents in which 7.78% male and 3.89% female respondents used own source, 1.11% male respondents used loan sources and 3.89% male and 1.11% female respondents used both sources as their sources of capital.

Under the age group of (48-58) years there was 16.11% respondents out of which 11.67% respondents used own sources among them 9.44% were male and 2.22% were female, only 1.67% male respondents used loan source and only 2.78% male respondents used both sources as their source of capital.

Under the age group of above 58 years there was 11.11% respondents in which 4.44% male and 5% female respondents used own sources, no one used loan sources and only 1.67% respondents used both sources as their sources of capital.

So from the above table It is revealed that out of 180 respondents maximum respondents used own sources as their source of capital. There was no respondents in the age group of above 58 years used loan capital. From the above table we can also say that out of 180 respondents only 7.22% respondents used loan capital.

Table-10 : Distribution of Respondents according to the sources of raw materials use

Age Group	Own sources			Purchase from local area			Both			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	5 (2.78)	—	5 (2.78)	—	4 (2.22)	2 (2.22)	—	—	—	5 (2.58)	4 (2.22)	9 (5%)
18-28	11 (6.11)	9 (5%)	20 (11.11)	8 (4.44)	9 (5%)	17 (19.44)	8 (4.44)	2 (1.11)	10 (5.56)	27 (15%)	20 (11.11)	47 (26.11)
28-38	14 (7.78)	5 (2.78)	19 (10.56)	13 (7.22)	7 (3.89)	20 (11.11)	2 (1.11)	2 (1.11)	4 (2.22)	29 (16.11)	14 (7.78)	43 (23.89)
38-48	11 (6.11)	—	11 (6.11)	7 (3.89)	5 (2.78)	12 (6.67)	5 (2.78)	4 (2.22)	9 (5%)	23 (12.78)	9 (5%)	32 (17.78)
48-58	11 (6.11)	4 (2.22)	15 (18.33)	9 (5%)	—	9 (5%)	5 (2.78)	—	5 (2.78)	25 (13.89)	4 (2.22)	29 (16.11)
58 & above	9 (5%)	5 (2.78)	14 (7.78)	—	2 (1.11)	2 (1.11)	2 (1.11)	2 (1.11)	4 (2.22)	11 (6.11)	9 (5%)	20 (11.11)
Total	61 (33.89)	23 (12.78)	84 (46.67)	37 (20.56)	27 (15%)	64 (35.56)	22 (12.22)	10 (5.56)	32 (17.78)	120 (66.67)	60 (33.33)	180 (100)

Table 10 shows the distribution of respondents about the sources of raw material used.

Under the age group of up to 18 years, 2.78% respondents used own source and 2.22% respondents purchased raw materials from local market.

Under the age group of (18-28) years, 11.11% respondents used own source, 19.44% respondents purchased raw materials from local market and 5.65% used both sources of raw materials.

Under the age group of (28-38) years, 10.56% respondents used own source, 11.11% respondents purchased raw materials from local market and 2.22% used both sources of raw materials.

Under the age group of (38-48) years, 6.11% respondents used own source, 6.67% respondents purchased raw materials from local market and 5% used both sources of raw materials.

Under the age group of (48-58) years, 18.33% respondents used own

source, 5% respondents purchased raw materials from local market and 2.78% used both sources of raw materials.

Under the age group of 58 years and above, 7.78% respondents used own source, 1.11% respondents purchased raw materials from local market and 2.22% used both sources of raw materials.

Table-11 : Distribution of Respondents according to having professional training

Age Group	Having training			Having no training			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	—	—	—	5 (2.78%)	4 (2.22%)	9 (5%)	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	—	—	—	27 (15%)	20 (11.11%)	47 (28.11%)	27 (15%)	20 (11.11%)	47 (28.11%)
28-38	—	2 (1.11%)	2 (1.11%)	29 (16.11%)	12 (6.67%)	41 (22.78%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	2 (1.11%)	—	2 (1.11%)	21 (11.67%)	9 (5%)	30 (16.67%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	2 (1.11%)	—	2 (1.11%)	23 (12.78%)	4 (2.22%)	27 (15%)	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	—	—	—	11 (6.113%)	9 (5%)	20 (11.11%)	11 (6.11%)	9 (5%)	20 (11.11%)
Total	4 (2.22%)	2 (1.11%)	6 (3.33%)	116 (66.44%)	58 (32.22%)	174 (96.67%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 11 shows the distribution of respondents according to having professional training.

Under the age group of up to 18 years there was no respondent who had professional training.

Under the age group of (18-28) years, there was also no respondent who had professional training.

Under the age group of (28-38) years, 1.11% female respondents who had training and 22.78% respondents who had no professional training

Under the age group of (38-48) years, 1.11% male respondents who had training and 16.67% respondents who had no professional training

Under the age group of (48-58) years, 1.11% male respondents who had training and 15% respondents who had no professional training

Under the age group of 58 years and above there was no respondents who had professional training.

So it is revealed from the table that there was very few respondents who had professional training.

Table-12 : Distribution of Respondents having awareness about the related Industries

Age Group	Awareness			Non-awareness			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	2 (1.11%)	2 (1.11%)	4 (2.22%)	3 (1.67%)	2 (1.11%)	5 (2.78%)	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	14 (7.78%)	11 (6.11%)	25 (13.89%)	13 (7.22%)	9 (5%)	22 (12.22%)	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	20 (11.11%)	9 (5%)	29 (16.11%)	9 (5%)	5 (2.78%)	14 (7.78%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	12 (6.67%)	5 (2.78%)	17 (9.44%)	11 (6.11%)	4 (2.22%)	15 (8.33%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	18 (10%)	—	18 (10%)	7 (3.89%)	4 (2.22%)	11 (6.11%)	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	4 (2.22%)	4 (2.22%)	8 (4.44%)	7 (3.89%)	5 (2.78%)	12 (6.67%)	11 (6.11%)	9 (5%)	20 (11.11%)
Total	70 (38.89%)	31 (17.22%)	101 (56.11%)	50 (27.78%)	29 (16.11%)	79 (43.89%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 12 shows the distribution of respondents having awareness about the related industry. It's found from the table that under the age group of up to 18 years, 1.11% male and female respondents respectively were aware about the related industry. On the contrary 1.67% male and 1.11% female respondents were not aware of related industry.

Under the age group of (18-28) years, 7.78% male and 6.11% female respondents were also aware but 7.22% male and 5% female were not aware of related industry.

Under the age group of (28-38) years, 11.11% male and 5% female respondents were also aware. On the other hand 5% male and 2.78% female respondents were not aware about related industry of Sitalpati.

23 male and 9 female respondents were there in the age group of (38-48) years. Total 32 persons i.e. 17.78% belonged to this age group. 6.67% male and 2.78% female respondents were aware of related industry but 6.11% male and 2.22% female were not aware.

Similarly, in the age group of 48-58, 13.89% male and 2.22% female respondents were present. So, there was 29 persons in the age group of 48-58 which was 16.11% of the sample population. 10% male respondents were aware where as 3.89% male 2.22% female were not aware of related industry of Sitalpat

In the age group of 58 and above, 11 male and 9 female i.e. 20 persons were there which was 11.11% of the sample population. 2.22% male and 2.22% female respondents were aware of related industry but 3.89% male and 2.78% female were not aware.

So it's very clear from the table, in the age group of 28-38, maximum number of respondents were aware of related Industry of Sitalpati. It's also revealed that total number of persons were not aware of related industry in the age group 18-28.

Table-13 : Distribution of Respondents requiring different types of Information about their profession

Age Group	Market		Growth		Training/Design		Govt. Fair/Govt. scheme		No requirement		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male+ Female
Upto 18	2 (1.11%)	2 (1.11%)	1 (0.56%)	—	—	2 (1.11%)	—	—	2 (1.11%)	—	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	2 (1.11%)	2 (1.11%)	2 (1.11%)	5 (2.78%)	4 (2.22%)	3 (1.67%)	2 (1.11%)	5 (2.78%)	7 (3.89%)	5 (2.78%)	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	18 (10%)	—	—	3 (1.67%)	—	2 (1.11%)	4 (2.22%)	4 (2.22%)	7 (3.89%)	5 (2.78%)	29 (16.11%)	14 (7.78%)	43 (3.89%)
38-48	4 (2.22%)	2 (1.11%)	11 (6.11%)	—	2 (1.11%)	2 (1.11%)	2 (1.11%)	—	4 (2.22%)	5 (2.78%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	3 (1.67%)	—	5 (2.78%)	—	4 (2.22%)	—	8 (4.44%)	2 (1.11%)	5 (2.78%)	2 (1.11%)	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	4 (2.22%)	—	3 (1.67%)	3 (1.67%)	2 (1.11%)	2 (1.11%)	—	2 (1.11%)	2 (1.11%)	2 (1.11%)	11 (6.11%)	9 (5%)	20 (11.11%)
Total	33 (18.33%)	6 (3.33%)	32 (17.78%)	11 (6.11%)	12 (6.67%)	11 (6.11%)	16 (8.89%)	13 (7.22%)	27 (15%)	19 (10.56%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 13 shows the distribution of respondents requiring different types of information about their profession. It is found from the table that under the age group of up to 18 years, 1.11% male and 1.11% female respondents were requiring information about market, 0.56% male respondents need information about growth, another 1.11% female persons required information about training or design of sitalpati where as 1.11% male persons had no such requirement about their profession.

Under the age group of (18-28) years, 1.11% male respondents and 1.11% female respondents required information about market, 1.11% male respondents and 2.78% female respondents need information about growth, 2.22% male respondents and 1.67% female respondents required information about training or design, 1.11% male respondents and 2.78% female respondents need information about government fair/government. scheme, but 3.89% male respondents and 2.78% female respondents had no such requirement about their profession.

There was 43 respondents under the age group of (28-38) years. 10% male respondents required information about market, 1.67% female respondents need information about growth, 1.11% female persons required information about training, 2.22% male and 2.22% female respondents required information government. fair or government. scheme where as 12 persons had no requirement.

Under the age group of (38-48), 2.22% male respondents and 1.11% female respondents required information about market, 6.11% male persons required information about growth, 2.22% need information regarding training, 1.11% respondents required information regarding government. fair or government scheme but 5% persons had no requirement.

Under the age group of (48-58) years, 1.67% male respondents required information about market, 2.78% male respondents need information about growth, 2.22% male persons required information about training or design, 12 persons need information about government. fair or government. scheme, 7 respondents had no such requirement about their profession.

Under the age group of 58 years & above, 2.22% male respondents need information about market, 3.33% respondent need information regarding growth, 2.22% respondents required information regarding training, 1.11% female persons required information about government. Fair or government scheme, 2.22% persons had no requirement.

So it was very cleared from the table that maximum number of respondents need information about market in the age group of 28-38. It was also revealed that minimum number of respondents required information regarding growth in the age upto 18. It also found that no person required information about government. fair or government. scheme.

Table-14 : Distribution of Respondents In respect of their Willingness to change from Ancestral profession to other profession

Age Group	Interest In profession			Not interest In profession			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	—	—	—	5 (2.78%)	4 (2.22%)	9 (5%)	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	11 (6.11%)	11 (6.11%)	22 (12.22%)	16 (8.89%)	9 (5%)	25 (13.89%)	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	23 (12.78%)	7 (3.89%)	30 (16.67%)	6 (3.33%)	7 (3.89%)	13 (7.22%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	20 (11.11%)	7 (3.89%)	27 (15%)	3 (1.67%)	2 (1.11%)	5 (2.78%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	20 (11.11%)	2 (1.11%)	22 (12.22%)	5 (2.78%)	2 (1.11%)	7 (3.89%)	25 (13.89%)	4 (2.22%)	29 (16.11%)
58 & above	11 (6.11%)	7 (3.89%)	18 (10%)	—	2 (1.11%)	2 (1.11%)	11 (6.11%)	9 (5%)	20 (11.11%)
Total	85 (47.22%)	34 (18.89%)	119 (66.11%)	35 (19.44%)	26 (14.44%)	61 (33.89%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 14 shows the distribution of respondents in respect of their willingness to change from ancestral profession to other profession. It is revealed that there was 66.67% male and 33.33% female in the sample population. Under the age group of up to 18 years, 2.78% male respondents and 2.22% female respondents did not interest in their profession.

Under the age group (18-28) years, 12.22% respondents were interested in their profession. 8.89% male respondents and 5% female respondents did not interest in their profession.

Under the age group of (28-38) years, 12.78% male respondents and 3.89% female respondents were interested in their profession but 3.33% male respondents and 3.89% female respondents did not interest in their profession.

Under the age group of (38-48) years, 11.11% male respondents and 3.89% female respondents were interested but 1.67% male respondents and 1.11% female respondents did not interest in their profession.

Under the age group of (48-58) years, 1.11% male respondents and 1.11% female respondents were interested. Where as 2.78% male respondents and 1.11% female respondents did not interest in their profession.

Under the age group of 58 years and above, 6.11% male respondents and 3.89% female respondents were interested in their profession but only 1.11% female respondents did not interest in this age group.

So it is very clear from the table, in the age group of (28-38) years, maximum number of respondents were interested in their profession, where as

highest number of persons were not interested in their profession in the age group of (18-28) years.

Table-15 Distribution of Respondents about the dependency on the medical treatment facilities

Age Group	Allopathy			Homeopathy			Both			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	4 (2.22 %)	4 (2.22 %)	8 (4.44 %)	—	—	—	1 (0.56 %)	—	1 (0.56 %)	5 (2.78 %)	4 (2.22 %)	9 (5%)
18-28	25 (13.89 %)	20 (11.11 %)	45 (25 %)	2 (1.11 %)	—	2 (1.11 %)	—	—	—	27 (15%)	20 (11.11 %)	47 (26.11 %)
28-38	27 (15%)	12 (6.67 %)	39 (21.67 %)	—	2 (1.11 %)	2 (1.11 %)	2 (1.11 %)	—	2 (1.11 %)	29 (16.11 %)	14 (7.78 %)	43 (23.89 %)
38-48	22 (12.22 %)	9 (5%)	31 (17.22 %)	1 (0.56 %)	—	1 (0.56 %)	—	—	—	23 (12.78 %)	9 (5%)	32 (17.78 %)
48-58	22 (12.22 %)	3 (1.67 %)	25 (13.89 %)	3 (1.67 %)	1 (0.56 %)	4 (2.22 %)	—	—	—	25 (13.89 %)	4 (2.22 %)	29 (16.11 %)
58 & Above	9 (5%)	5 (2.78 %)	14 (7.78 %)	2 (1.11 %)	2 (1.11 %)	4 (2.22 %)	—	2 (1.11 %)	2 (1.11 %)	11 (6.11 %)	9 (5%)	20 (11.11 %)
Total	109 (60.56 %)	53 (29.44 %)	162 (90%)	8 (4.44 %)	5 (2.78 %)	13 (7.22 %)	3 (1.67 %)	2 (1.11 %)	5 (2.78 %)	120 (66.67 %)	60 (33.33 %)	180 (100 %)

Table 15 shows the distribution of respondents in regard to their dependence on the medical treatment. There was 9 respondents under the age group of up to 18 years, out of them 2.22% male respondents and also 2.22% female respondents were dependant on Allopathic treatment and there was 0.56% respondent who used both the facilities of medical treatment.

Under the age group of (18-28) years there was 47 respondents among them 13.89% male respondents and 11.11% female respondents were dependant on Allopathic treatment, 1.11% male respondents were dependant on homeopathy treatment.

Under the age group of (28-38) years there was 43 respondents out of them 15% male respondents and 6.67% female respondents were dependant on Allopathic treatment, 1.11% female respondents were dependant on

Homeopathy and 1.11% female respondents were dependant on both type of treatment.

Under the age group of (38-48) years there was 12.22% male respondents and 5% female respondents who were dependant on Allopathic treatment, 17.22% male respondents and 0.56% female respondents who were dependant on Homeopathy treatment.

Under the age group of (48-58) years 12.22% male respondents and 1.67% female respondents were dependant on Allopathic treatment, 1.67% male respondents and 0.56% female respondents were dependant on Homeopathy treatment.

Under the age group of above 58 years 5% male respondents and 2.78% female respondents were dependant on Allopathic treatment, both 1.11% male respondents and 1.11% female respondents were dependant on Homeopathy treatment and 1.11% female were depend on both type of medical treatment

So from the above table we can say that 90% respondents were dependant on Allopathic treatment, 7.22% respondents were dependant on Homeopathy treatment and 2.78% respondents were dependant on both type of treatment.

Table-16 Distribution of Respondents retrieving information from different sources

Age group	Panchayat	Media		Neighbour
		Print	Electronic	
Up to 18	—	3(1.67%)	9(5%)	3(1.67%)
18-28	5(2.78%)	7(3.89%)	23(12.78%)	2(12.22%)
28-38	7(3.89%)	—	34(18.89%)	16(8.89%)
38-48	4(2.22%)	4(2.22%)	30(16.67%)	2(12.22%)
48-58	4(2.22%)	—	16(8.89%)	18(10%)
Above 58	3(1.67%)	—	6(3.33%)	20(11.11%)

Table 16 shows the distribution of respondents according to their sources of retrieving information relating to Patials work.

Under the age group of up to 18 years, 1.67% respondents had a practice to retrieved information from print media, 5% respondents from electronic media and also 1.67% respondents from their neighbour.

Under the age group of (18-28) years, 2.78% respondents retrieved information from Panchayat, 3.89% respondents from print media, 12.78% respondents from electronic media and 12.22% respondents from their neighbour.

Under the age group of (28-38) years, 3.89% respondents retrieved information from Panchayat, 18.89% respondents from electronic media and 8.89% respondents from their neighbour.

Under the age group of (38-48) years, 2.22% respondents retrieved information from Panchayat, 2.22% respondents from print media, 16.67% respondents from electronic media and 12.22% respondents from their neighbour.

Under the age group of (48-58) years, 2.22% respondents retrieved information from Panchayat, 8.89% respondents from electronic media and 10% respondents from their neighbour.

Under the age group of above 58 years, 1.67% respondents retrieved information from Panchayat, 3.33% respondents from electronic media and 11.11% respondents from their neighbour.

So, it is very clear from the table that most of the respondents used electronic media as their sources of information.

Table-17 : Distribution of Respondents about the use of Banking System

Age Group	Bank-User			Bank-non user			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Up to 18	2 (1.11%)	—	2 (1.11%)	3 (1.67%)	4 (2.22%)	7 (3.89%)	5 (2.78%)	4 (2.22%)	9 (5%)
18-28	4 (2.22%)	—	4 (2.22%)	23 (12.78%)	20 (11.11%)	43 (23.89%)	27 (15%)	20 (11.11%)	47 (26.11%)
28-38	14 (7.78%)	3 (1.67%)	17 (9.44%)	15 (8.33%)	11 (6.11%)	26 (14.44%)	29 (16.11%)	14 (7.78%)	43 (23.89%)
38-48	3 (1.67%)	2 (1.11%)	5 (2.78%)	20 (11.11%)	7 (3.89%)	27 (15%)	23 (12.78%)	9 (5%)	32 (17.78%)
48-58	3 (1.67%)	—	3 (1.67%)	22 (12.22%)	4 (2.22%)	26 (14.44%)	45 (13.89%)	4 (2.22%)	29 (16.11%)
58 & Above	2 (1.11%)	—	2 (1.11%)	9 (5%)	9 (5%)	18 (10%)	11 (6.11%)	9 (5%)	20 (11.11%)
Total	28 (11.11%)	5 (2.78%)	33 (18.33%)	92 (51.11%)	55 (30.56%)	147 (81.67%)	120 (66.67%)	60 (33.33%)	180 (100%)

Table 17 shows the distribution of respondents about the use of banking system. It is revealed from the above table that under the age group of up to 18 years, 1.11% respondents used banking system and 3.89% respondents did not use banking system.

Under the age group of (18-28) years, 2.22% respondents used banking system and 23.89% respondents did not use banking system.

Under the age group of (28-38) years, 9.44% respondents used banking system and 14.44% respondents did not use banking system.

Under the age group of (38-48) years, 2.78% respondents used banking system and 15% respondents did not use banking system.

Under the age group of (48-58) years, 1.67% respondents used banking system and 14.44% respondents did not use banking system.

Under the age group of above 58 years, 1.11% respondents used banking system and 10% respondents did not use banking system.

So it is revealed from the above table that 81.67% respondents did not use the bank to do their business.

8. Conclusion :

The above study has been undertaken to explore the information needs and information seeking behavior of the patial community and to find out the possible way by which their information needs might be fulfill. The development of patials like any other community depends on their socio-economic conditions. On the basis of analysis and findings we can conclude that for the development of the Patials regarding their occupation, health, education, etc. they needs to explore their information needs, increase literacy, and awareness.

9. Suggestlions :

Following are some of the suggestlions to improve the overall condition of the Sitalpati craft:

1. Upgradation of artisans skills through appropriate design and technology.
2. intervention to enable artisans to produce innovative and value added items to cope with the fast changing market demand.
3. Development of new designs and prototypes to cope with the test of consumers and contribute to enhance the sales of handicrafts in foreign and domestic markets.
4. Improvements and diversification of products through design and technology imputes for meeting market demand.
5. Exposure of prototypes to the markets for test marketing.
6. Sustaining the sanctity of the traditional heritage of Indian arts and crafts.

10. References :

- Agarwal, A.K. (1988). North Eastern Economy-Problems and Prospects, Delhi: Mittal Publications.
- Alatoa, H. (1992). Community information needs In the pacfic.*Figl Library Association Journal*, (28).
- Amey, L. (1997). Rural social equity and school housed public llbraries. *Australasian Public Libraries and Information Services*, 10(4).
- Baron, D.D. (1995). Staffing rural public libraries: the need to invest in intellectual capital. *Library Trends*, 44(1).
- Bhattacharyya, A. (2003). *The profile of a national enterprise In bengal: P. M. Bagchi & Co. 1883-1947.* (p. 128). Kolkata: Readers Service.
- Bunch, A. (1982). Community information services, their origin, scope and development. London: Clive Bingley.
- Caron, J. (1997). Les besoins d'information dans les groupes communautaires lorsque le besoin en matiere d'information se confound avec sa production.the Information

- needs of community groups:reconciling the acquisition of information with its production. *Documentation et Bibliothèques in french language Reports*, 43(4).
- Chakrabarti, B. (2001). Over the edge of information in the information age: information behavior of the Totos: A small marginal Tribal Community in Sub – Himalayan, North Bengal, India. *International information and library review*, (33).
- Chakrabarti, B. (2005). Information needs of Dhibar community of Phakirala and Malopara. *Calcutta University Journal of Information Studies*, (XI).
- chakrabarti, B. (2006). Occupational information needs of rural artisans. In *Information Strategies for Rural India*.
- Chakrabarti, B. and Kundu, D.K. (2006). Information needs of cottage industries: a survey on north 24 parganas district. *Calcutta University Journal of Information Studies*, (7 & 8).
- Chakrabarti, B., & others, (2008). Information need of dukpa community of lepcha-kha(buxa) in the district of Jalpaiguri. *Calcutta University Journal of Information Studies*, 9 and 10.
- Chattopadhyay, A. and Chakrabarti, B. (2003). Educational information need of Solapith (Malakar) community at Bankabasi village in Burdwan district of West Bengal and the role of Gram panchayat. *IASLIC Conference*.
- Christensen, S.B., Broadway, M.D., & Garbutt, H. (1995). Medical information needs and frustrations in a rural community. *Rural libraries*, 15(2).
- Dasgupta, P.K. (1983): Social Dimension of Planning with reference to North-East India, Delhi: Omsons Publications.
- Dhar, P.N. and Lydall, H. (1961): The Role of Small Enterprises in India's Economic Development. Bombay : Asia Publishing House.
- Fairer, W., & Felcote, A. (1987). Basic community information needs of urban black women. *Mousaion*, 5(1).
- Kaniki, A.M. (1995). Exploratory study of information needs in the kwa-ngwanase (natal) and qumbu (transkei) communities of south africa. *South african journal of library and information science*, 63(1).
- Karan, A. and Chakrabarti, B.(1999-2000). Bio-Centres of M.S. Swaminathan Research Foundation. *Calcutta University Journal of Information Studies*, 2(2).
- Legoabe, F.N., & Boon, J.A. (1992, 6-8, May). *Information needs of urban black south africans with reference to mamelodi*. Conference on library and information services for future development of southern africa, Pretoria.
- Mall, D.D. (1998): 'Development of Micro, Small and Medium Enterprises of India: Current Scenario and Challenges. *SEDME (Small Enterprises Development, Management and Extension) Journal*, 4(25).
- Mashreky, S.R. and Others (2010). Health seeking behaviour of parents of burned children in Bangladesh is related to family socioeconomics. *Injury*, 5(41).
- Mercer, P.Y. (1998). Information needs of rural users:an updates. *Research and Innovation Report, MX*, British library.
- Moreira, D., & Ligla, M. (1990). A cao do carro-biblioteca ou, o desafio de se incentivar o gosto pela leitura em comunidades de baixa renda. the role of the bookmobile or the challenge to stimulate reading in poor urban communities in Brazil. *Revista da Escola Biblioteconomia da UFMG*, 19(1).
- National Committee on Science and Technology, (1975): Report on the Science and Technology Panel for Khadi and Village Industries, Government of India.

- Odini, C. (1995). Stimulating the use of information in Kenya. *New Library World*, 96(11/19).
- Okello-Obura, C. (2010). Assessment of the problems LIS postgraduate students face in accessing e-resources in Makerere University, Uganda. *Collection Building*, 3(29).
- Pienaar, R.E. (1995). Survival Information and public libraries. *Cape Librarian*, 39(5).
- Poller, A.C. (1995). Multimedia for development: a challenge to South African public libraries. *Mousaion*, 13(1/2).
- Rabha, S.K. (2005). Uttar Banger Rabha Sanaskriti O Ritinitt. *Lokosruti*, 1(4).
- Ramesha, K. (1999). Institutional Credit to SSI Sector: Role of Banks and SFCs in the post-reforms Scenario(p.20-31). *The Asian Economic Review*. 1(41).
- Seriki, P.S. (1994). Information needs for improved productivity in a rural agrarian community: a case study of Ibillo community in Edo State of Nigeria. *Library focus*, 12(1&2).
- Seth, M. and Parida, B. (2006). Information needs and the use pattern of disadvantaged communities: a case study. *Library Philosophy and Practice*, 1(9).
- Sheeja, N.K. (2010). Science vs Social science: A study of information-seeking behaviour and user perceptions of academic researchers. *Library review*, 7(59).
- Swiegelaar, J. (1989). Saibil-konferensie 1989: die openbare biblioteektooneel. Sallis conference 1989. *Cape Librarian*, 33(10).
- Tikekar, A.C. (2000). Rural public libraries as community information centers. *herald of Library science*, 39(3-4).
- Uhegbu, A.N. (2001). Determinants to information service for community development. *Library Review*, 50(6&6).
- Westbrook, L. (2000). Analyzing community information needs. *Library Administration and Management*, 14(8).
- Williamson, K. (1986). Information seeking by users of a citizens advice bureau. *Australian Library Journal*, 35(4).
- Winston, M. (1995). Cultural sensitivity: for, how to make the library a data place. *Reference Services Review*, 23(3).

NECESSITY OF DEPLOYING SOCIAL MEDIA IN WEBSITES OF THE UNIVERSITY LIBRARIES IN KOLKATA

AROJA GHOSH

Abstract : Social Networking sites are one of the new technologies offering libraries the opportunity to reach out to its users. The idea of having a social networking site linked to a University library's web page is to enable patrons' have a live discussion with a professional on issues pertaining to the use of the library and also allow the libraries to advertise their programs and activities. This study tells us about the necessity of deploying social media in Websites of the University libraries in Kolkata according to today's center of attraction in Internet. It describes the usefulness of social media in promoting libraries and how to use social media for library. This literature also provides the details about three most popular social networking tools and for each section it will cover the "What is It" and "How to use It" so that you know "Why use It" and "What to look out for in using It".

Keywords : Social Media, Websites, University, Libraries, Kolkata

Introduction

Imagine a time when social media becomes an integral part of life. In fact, there's no need to imagine any more, as Facebook and Twitter use soars beyond the combined total of more than 2 billion users. Social media is now mainstream. Many businesses, cultural organizations and other institutions are leveraging social media to achieve their strategic goals. While many libraries already have a social media presence via Facebook and Twitter, how are libraries considering social media as part of their core communication and engagement strategies? How are libraries preparing their staff to communicate and engage professionally using social media through the inclusion of social media in library strategic plans? In short, how are libraries future-planning for the inclusion of formal social media roles in their institutions? It's time to start answering these questions and to put forward the case for formal recognition of social media duties and the creation of specialist social media librarian roles.

Social Networking sites are one of the new technologies offering libraries the opportunity to reach out to its clients. The use of this platform has affected the operations and service delivery of all organizations. Based on this fact most International University Libraries have attached a link of a social networking site to their library's web pages. The idea of having a social networking site linked to a University library's web page is to enable patrons' have a live discussion with a professional on issues pertaining to the use of the library and also allow the libraries to advertise their programmes and activities.

What Is Social Media

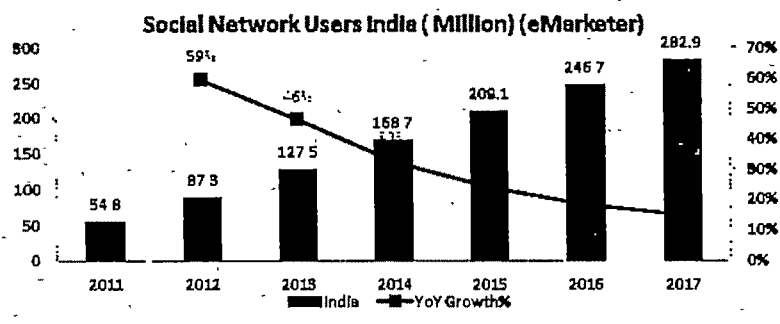
Social media refers to the means of interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks.¹ Andreas Kaplan and Michael Haenlein define social media as "a

group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content.”² Furthermore, social media depends on mobile and web-based technologies to create highly interactive platforms through which Individuals and communities share, co-create, discuss, and modify user-generated content. It introduces substantial and pervasive changes to communication between organizations, communities, and individuals.³

Social media differentiates from traditional/industrial media in many aspects such as quality,⁴ reach, frequency, usability, immediacy, and permanence.⁵ There are many effects that stem from internet usage. According to Nielsen, Internet users continue to spend more time with social media sites than any other type of site.

Why Social Media

Social Network Users Statistics In India from 2011 till 2017–Maturing growth next four years



According to a new eMarketer report, “Worldwide Social Network Users: 2013 Forecast and Comparative Estimates,” the number of social network users in India is expected to cross 100 million users and reach more than 127 million users by end of 2013. The total numbers of social media users will more than double and reach close to 283 million users by 2017. But the interesting fact is that the number of users has already started to see slower growth from 2013 and the decline in the YoY growth is expected to continue which also highlights the maturing numbers for the social networks in India which is also a global trend. There has been a strong social media adoption in India since past few years as the business organizations, government organizations and even political parties are actively utilizing the various social media platforms and social network sites to reach the people. 75% of Indians who are active internet users use social networking sites like Facebook, Twitter, YouTube, Pinterest etc. and interaction with friends, relatives, colleagues and community, live chat, status updates, image as well as video-sharing are some of the major activities by Indians that spend close to 30 minutes every day online on the different social networks.¹³

According to Internet and Mobile Association of India (IAMAI), the number of social media users in Urban India reached 66 million by June 2013 and by mid-2014 expected to cross 80 million users. Some 97 per cent of them are on Facebook. And they are spread beyond the big metros. One-third of social media users live in towns with a population of less than 5 million; 25 per cent of the total users live in towns with less than 2 million inhabitants. Social media usage is also fast catching up with mobile internet users. According to the report, 77 per cent of the users use mobile for social media. Email, social media, search, app store and chat/IM are used every day by those accessing internet through mobile. *Facebook* has 78 million monthly active users (MAUs) in *India* for the quarter ending March 31, 2013, registering a 50% increase from the Q1 2012. LinkedIn has 20 million users, Twitter has 33 million users, Pinterest has 5.5 million users in India at the end of March 2013. Indians are very active on different social networks and are also actively increasing the amount of time they spend on the various social networking sites.¹³

Social Media & Library

There is a tendency and expectation for users in social networks to be more personal and open. Certainly it is subjective how personal and open one can be. Perhaps a guiding principle for you is this: Use professional judgement and common sense. Much of how you relate to people in real life applies to your conduct in online social networks.

Starting a social networking site for your library (e.g. a blog, wiki, Facebook account) is like creating an additional channel for your users. Do consider how you intend to maintain and support that channel. For instance, posting new content, filtering or responding to comments and questions from users can be done.

Reputation of Social Media in Promoting Libraries

Social media (e.g., Facebook, Twitter) is one of the cheapest and most effective ways to promote your library and activities. It is a free channel to communicate information pertaining to book signings, art exhibits, book clubs, meetings, new books, and so much more.

Expands your community

Social media reaches not only your current patrons, but invites new patrons to visit your library and to use your services. This is done by adding value to the social community. Responding to inquiries about information, local history, etc. in social media channels promotes your library's goodwill.

Engages your community

Social media is a great way to invite your community to provide feedback and to engage with others in your online community. How? Your community can easily share your activities and events with others in their social networks. Invite participation by letting your community identify people and buildings in old photographs, or welcome feedback about events. The opportunities for engagement in social media are numerous. These opportunities translate to promoting your library and activities.

Encourages use of resources

Social media provides better access to information. It puts the library where the users are. It enables patrons to share their experiences and in turn, helps bring others into the library. Social media lets you easily post upcoming events or seminars or new arrivals. These postings quickly spread when patrons share the information with their friends through their social media channels.

Enlarges learning opportunities

Social media can be used to provide how-to videos or blog posts about the library. You can hold Skype calls with authors and share the recorded call through social media channels. You can recruit volunteers and send out reminders of special resources available at your library. As you share these types of event and activities, your audience grows exponentially.

Effective targeted promoting

Reach your target audience where they are...online. Target specific patrons and soon-to-be patrons based on their demographics and online behavior. Send them the news they are most interested in and most likely to respond to. Promote your library and activities based on their interests.

Take advantage of the power of social media to promote your library and activities. Fangle's products like Libserra are designed specifically for libraries and is a comprehensive social and viral marketing suite.

Ways of using Social Media Marketing for Libraries

There are now so many social media platforms available for libraries to participate in, but it's sometimes difficult to get a handle on how these channels can best be used for marketing library services. If you're considering leveraging social media to promote your library, here are some strategies I've found helpful:

Think Big, Start Small

Just because you can sign up with every social media channel out there doesn't mean you should pick all of them at first time. Pick one of the major outlets such as Facebook, Twitter, or LinkedIn and create an outstanding presence there...then take that experience (and those followers!) and move on to others. It's better to have a strong presence on just a couple of platforms than be mediocre on many.

Combine Content Creation & Content Curating

You don't have to create all original content for your blog, tweets, or Facebook statuses, and actually it's a better idea not to do so. By curating and linking to other people's content, you're not only offering your readers recommended resources, but social networking with the content's creator. When you link back to other people's posts, tweets, etc., you're making a connection with them that may lead to them linking to your posts in the future.

Create Connected and Consistent Brand Channels

Create a consistent presence on all of the social media platforms you're using for your library. This means use the same logo, the same color scheme, etc. Don't make visitors and patrons wonder if this is really your profile or account.

And be sure to connect all of your profiles on each channel-link to your blog, Twitter, and library's website on Facebook. Link to all of your social media accounts on your library's website, etc.

Take Part in the Conversation

No one wants to see a one-way conversation. Be diligent about keeping up with posts on your library's Facebook page and respond to them in a timely manner. If someone retweets you on Twitter, thank them and think about retweeting them in the future. Keep an eye on the @Connect section of your Twitter dashboard for tweets that have mentioned you—someone may be asking a question of the library. This just comes down to listening and being aware of your online community.

Promote Events

A great way to market the library is to let everyone know about all of the events you have going on. Create descriptive hashtags (#awesomelibraryevent!) that can be used on sites such as Twitter and Facebook and encourage people to attend and live blog or tweet. Encourage people to take photos and post them to your Facebook page, share them on Pinterest, etc. Follow the complete event lifecycle by blogging it yourself on your library blog, tweet about it before, during, and after it takes place, put photos on Facebook, etc.

Try out Visual Social Media

New platforms such as Pinterest, the digital pinboard application or the Instagram mobile social network are becoming increasingly popular. Once you've established yourself on one of the major networks you might give one of these a try. These offer some unique opportunities to showcase library resources, events, staff, and guest speakers in a visual way. For example libraries are using Pinterest to create book boards, showcase educational videos and webcasts, highlight special collections and more.

Feature Patrons

Whether it's on your Facebook page, pins on Pinterest, or in videos on YouTube, spotlight your library patrons enjoying your events or using your services. Show your patrons that you appreciate them and show potential patrons that your patrons appreciate the library's programming.

Offer Added Value

Let's face it, no one is going to subscribe, follow, or tune-in to a stream of continual marketing hype. The best way to use social media for marketing is to establish a channel that offers information and content curation that is valuable to your target audience. This is what gets people to follow you and while they're listening you can also fill them in on all of the great services and programs you've got going on in the library.

Claim Your Location

Even if you're not participating in location-aware mobile social networks, many of your patrons may be. Think about social networks such as Foursquare and Facebook Places where you'll want to claim your library's location.

Engage Patrons with Contests

People love to be rewarded for their social media attention. Many social media sites offer great opportunities for contests and challenges for creative libraries. Foursquare for example allows locations to offer awards to the mayor (the person who checks into a particular location the most), as well as loyalty rewards (e.g. on your fifth check-in get a free library tote bag!). Pinterest is another great place for contests. Libraries could challenge patrons to create book boards for reading programs or book clubs, etc.

Social Networking Tools

Blogs and Blogging

That being said, it certainly helps that you—as a librarian serving young community—have a blog, as some of your young users may want to know more about you and what your library has to offer.⁶

General features of blogs

- They are online tools for users to publish content on the Internet.
- They allow an individual or a group of people to publish text, images, audio and videos online.
- Many features in the blog (e.g. RSS Feed, Comment, Archiving, design templates) are provided automatically. Users do not need to know how to code in HTML in order to manage or publish a blog.⁶

Some popular free blog services

- Blogger - <<http://www.blogger.com>>
- LiveJournal - <<http://www.livejournal.com>>
- Wordpress - <<http://www.wordpress.com>>
- Xanga - <http://www.xanga.com>

How to search for blogs

Increasingly, there is less distinction between a blog and a website. You may search for blogs the way you search for websites, by applying various search strategies using an Internet Search Engine. There are also some search engines for blogs, like the following:

- Bloglines - <<http://www.bloglines.com>>
- Google Blog Search - <<http://blogsearch.google.com>>
- IceRocket - <<http://blogs.icerocket.com>>
- Technorati - <<http://technorati.com>>

What do you need in order to blog?

- You need a computer that is able to access the Internet.

FaceBook

Commonly referred to as a "Social Networking Site", Facebook.com is a service that allows users to:

- Share their profiles online and be found by other Facebook users.

- Add themselves to other users' "Friends" network, and invite others to be added as their "Friends".
- Search for other Facebook users to add as "Friends".
- Read updates on recent activities by their "Friends" in Facebook (e.g. status updates, groups that they recently joined, new Friends added).
- Join other Facebook communities (called Facebook Groups), as well as start their own.
- Allow users to post content (e.g. photos, videos, music) to their own pages, communities / groups, or as comments.
- Add various applications within Facebook, ranging from games to applications (built-in email, brief status update message, photos, videos etc.)⁶

What do you need in order to use Facebook?

You need a computer that can access the Internet.

Are there any costs associated with using Facebook?

It is free to join and use Facebook

Some libraries and library-related Facebook pages/applications

- Delray Beach Public Library Teens Facebook page - <http://www.facebook.com/pages/Delray-Beach-Public-Library-Teens/34221738893>
- Facebook Apps For Libraries - <http://www.facebook.com/group.php?gid=2469777131>
- New York Public Library Facebook page - <http://www.facebook.com/pages/New-York-NY/The-New-York-Public-Library/21557622350>
- WorldCat - Facebook Apps For Libraries - <http://www.facebook.com/group.php?gid=2469777131>

Twitter

This service is also called "Microblogging". Its main feature is that it allows users to publish short messages (up to 140 characters).⁶

Features of Twitter

- Users can publish short messages (up to 140 characters) on your Twitter profile page.
- Messages can be sent via the Internet or from mobile phones.
- Other users can read your updates by accessing the URL of your Twitter profile page. Users can choose to restrict who can view your profile page.
- Users can also choose to receive alerts via their mobile phone or other related services.
- People can look for people they know using the Twitter search feature, or by giving permission for Twitter to filter through one's email addresses.⁶

What do you need in order to use Twitter?

You need a computer that can access the Internet. You would need a mobile phone, if you intend to post Twitter messages using your phone.⁶

Are there any cost associated with using Twitter?

It is free to use Twitter if you post messages via the Internet (other than your own Internet connection charges). If you send messages via your mobile phone, you may have to incur charges imposed by your mobile phone service provider.⁶

Examples of teen library services using Twitter

- Denver Public Library Teens - <http://twitter.com/denver_evolver>
- Garden City Public Library Teens - <<http://twitter.com/gcplteens>>
- Grand Rapids public library Teen services department - <http://twitter.com/grplteens>

Conclusion

From the above discussions it has been established that access to Internet connectivity and computers are on the increase. University of Education has moved on with the introduction of high speed of internet on their campuses giving students and the university community access to Internet in the comfort of their hall of residence and homes. It is clear that students of Twenty-First century are not interested in printed work; for librarians to make libraries interesting innovations such as social networking site should be introduced to attract them to the library environment. Social networking sites would help to establish a cordial relationship between librarians and patrons; market the library's services; announce library programs on the wall and so on.

This technology provides the enabling platform that goes beyond the traditional service delivery by allowing patrons to interact in real time with librarians in the comfort of their hall of residence or homes. Librarians must acquire the necessary skills in information technology to meet the challenging demands of social networking sites.

References

1. Ahlqvist, Toni; Bäck, A., Halonen, M., Heinonen, S (2008). "Social media road maps exploring the futures triggered by social media". *VTT Tiedotteita - ValtionTeknillinen Tutkimuskeskus* (2454): 13.
2. Kaplan Andreas M., Haenlein Michael (2010). "Users of the world, unite! The challenges and opportunities of social media". *Business Horizons*. p. 61.
3. H. Kietzmann, Jan; Kristopher Hermkens (2011). "Social media? Get serious! Understanding the functional building blocks of social media". *Business Horizons* 54: 241–251.
4. Agichtein, Eugene; Carlos Castillo. Debora Donato, Aristides Gionis, Gilad Mishne (2008). "Finding high-quality content in social media". *WSDM'08 - Proceedings of the 2008 International Conference on Web Search and Data Mining*: 183–193.
5. Nigel Morgan; Graham Jones; Ant Hodges. "Social Media". *The Complete Guide to Social Media From The Social Media Guys*. Retrieved 12 December 2012.

6. Ivan Chew (2008). "Web 2.0 and Library Services for Young Adults: An Introduction for librarians". *IFLA Libraries for Children and Young Adults Section*.
7. Bell, S.J. (2007). Building better academic libraries with Web 2.0 technology tools. *LibraryIssues*, 28(2), pp. 1-4
8. Byers, Peggy Y. Wilcox, James R. (1991) Focus Groups: A Qualitative Opportunity for Researchers, *The Journal of Business Communication* 28:1: Winter 1991.
9. Dadzie, Perpetua S. (2007) Information Literacy: assessing the readiness of Ghanaian Universities, *Information Development*, vol 23, No. 4, pp 265-277.
10. Denscombe, M. (1998) *The good research guide for small – scale social research project*; Buckingham, Open University Press. pp 87-106
11. <http://www.ala.org/news/mediapresscenter/americaslibraries/socialnetworking>
12. <http://www.ala.org/news/mediapresscenter/americaslibraries/soal2012/social-networking>
13. <http://socialmediacases.blogspot.in/2013/07/social-network-users-statistics-india.html>
14. <http://www.digitalstrategyconsulting.com/india/>

SOME UNIQUE INFORMATION REPOSITORIES IN NORTH BENGAL

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OINDRI MITRA, SOUMEN KAYAL AND SUMANA GANGOPADHYAY

Abstract: Information repositories are the places where information is collected, managed and shared. Although the type of materials and professional practices differ in museums and libraries, their common objective is to acquire and preserve the cultural heritage of a country. Against the backdrop of North Bengal's long cultural history, this article provides an overview of institutions which are the repositories of the cultural heritage of that region.

Keywords: Information repositories, Monastery, Museum, Manuscripts, Libraries.

1. Introduction:

Libraries, archives, and museums are places where we learn about ourselves and the world around us. They inspire us to make a better future by helping us to remember and understand the past. As cultural heritage institutions, libraries, archives, and museums share common goals to acquire, preserve, and make accessible artifacts and evidences of the world's social, intellectual, artistic and even spiritual achievements.

The term information repository is used here to denote institutions like museums and libraries which collect and manage the information present in various forms; museums focus on objects and libraries on documents. All these materials can be considered as information, and therefore the concept of information here becomes multidimensional. Repository commonly refers to a location for storage, often for safety or preservation. The concept of a repository varies widely, but is generally equated with the storage, preservation and continued availability of the resources. The information repositories discussed here are in their true sense unique as, they hold some very distinct collections.

2. Objective:

The objectives of the study are:

- To know the different aspects of Buddhist monastic libraries;
- To know about the monastic libraries present in the North Bengal and their preservation status;
- To provide a state-of-the-art-report on preservation practices followed in the different museums and monastic libraries in North Bengal.

3. Methodology:

This is a survey based study. The survey work included field visits to monasteries, museums and libraries of the North Bengal region for data collection. For this purpose a field tour to Shilliguri, Darjeeling and Kalimpong was undertaken where different institutions are visited. Data was mainly collected

through interviewing the librarians, library-in-charges Head of selected Institutions of North Bengal. This data is supplemented with non-participant observation. Finally, the collected data are summarized and analyzed to provide a state-of-the-art-report.

4. North Bengal—A Brief Profile:

North Bengal at present means the history of the seven districts of northern parts of West Bengal. Siliguri, Jalpaiguri, Cooch Behar, Darjeeling, Northern and Southern Dinajpur and Malda. Although in earlier times, before the partition of India in 1947, North Bengal included the districts of Rangpur and Rajshahi, presently part of Bangladesh. The region shares its borders with Bihar and Nepal in the east, Sikkim and Bhutan in the north, Assam and Bangladesh in the east and is divided with the rest of West Bengal by the river Ganga to the south. The geographical diversity, blended with the cultures of different ethnic groups has placed North Bengal in a very interesting position.

5. Information repositories at a glance:

The main information repositories discussed here are the libraries of the various monasteries, along with the museums. The traditional monastic libraries were magical sanctuaries that enveloped with their unique atmosphere. The serenity in atmosphere, the unmistakable smells of old manuscripts and incense, and the colourful interior is an enriching lifetime experience. The Buddhist monasteries have traditionally served as primary centres for generation and preservation of Tibetan culture, both material and intellectual. Three such institutions in North Bengal are:

i) Sakyaguru Monastery, Ghoom, Darjeeling

This monastery was established in 1915. The monastery has a library with a rich collection of Buddhist religious texts. All the manuscripts are in Tibetan language. One unique and important collection is the Commandments of Gautama Buddha. An interesting feature is that there are manuscripts of 7th century AD, which are written on handmade papers. All the original manuscripts and copies of manuscripts bear label on the frontside of the cloth, which covers or wraps them.

ii) Druk Gar Library, Dali Monastery, Darjeeling

This monastery was established in 1974. This monastery houses the largest monastery library in Darjeeling. It has a large collection of about 10,000 religious texts.

iii) Homin Ngayab Zandok Palri Phadang Tseno Monastery, Durbin, Kalimpong

This monastery has a huge collection of Tibetan manuscripts on Buddhist religion and philosophy. There are about 108 original manuscripts written on handmade papers. Foreigners and research scholars interested in Tibetan studies flock to this place to carry out research work.

There are a number of interesting museums located in the Darjeeling district. These museums are the custodians of the intellectual and cultural heritages of the region.

- iv) Akshaya Maitreya Heritage Museum Incorporating Raja Rajaram Museum Collection, North Bengal University
This museum was started in 1964 at the classroom of Art Faculty of North Bengal University. Nirmal Chandra Chowdhury of Rajshahi had a rich collection, which he donated to the North Bengal University in 1964 for building up a museum in the name of Akshaya Kumar Maitreya. Later in 1982, S.P. Roychowdhury donated his enviable collection of tribal artifacts and objects. In 2006, the collections were transferred to the new building in university campus and become known as 'Akshaya Maitreya Heritage Museum Incorporating Raja Rajaram Museum Collection'. This is the largest museum in this geographical region.
- v) Lepcha Museum, Big Dhara, Kalimpong
It is a personalia museum established in 1985 by Padmashri Sonam Tshering Lepcha, musician, famously known as *Lepcha Sangeet Samrat*. This one room museum houses an interesting collection of tribal culture. All the objects in this museum are either personal collection of Padmashri Sonam Tshering Lepcha or artifacts made by him. A person, who avoids exposure, alone built up the unique collection of mainly anthropological specimens, like various musical instruments, traditional Lepcha household materials and other things related to Lepcha culture. This personalia museum is perhaps the only one which can boast of the carrier of Lepcha culture, and this museum needs to be exposed to the public instantly.
- vi) Himalayan Mountaineering Institute Museum, Darjeeling
HMI museum is the oldest Mountaineering Museum of the country. It was established in 1957. It serves as a centre of educational and research on mountaineering activity, both for the trainees and research scholars.

6. Information storage and retrieval:

All the three monasteries belong to Mahayana Buddhist religion, and are equipped with libraries housing rich collection of Buddhist religious texts. All the manuscripts are in Tibetan language. Same storage technique is followed in all these monastic libraries. Manuscripts with large number of leaves are often kept in separate volumes, so that the thickness of each volume does not exceed five inches approximately, ensuring ease of handling. This in turn ensures less wearing and less tearing. Each of these parts is kept in between two wooden rectangular pieces of about half inch thickness, for protecting the shape and structure of the manuscripts.

All the manuscripts are wrapped in cotton cloth following traditional Tibetan manuscript wrapping technique. For this purpose two large square pieces of cloth called '*peré*' of either red, yellow or orange colour are used. These colours are considered as sacred colours and these colours also have a good preservative effect. Each manuscript is first tightly wrapped in single cloth and then followed by another wrapping in second cloth. Each part of manuscript bears a label called '*dongda*' (meaning frontside).

The labels are three layered, and consists of clothing of red, yellow and

blue colour, denoting fire, earth and water elements of Buddhist religion. Each label has the information about the name and part of the manuscript, as well as starting and ending page number of that part, which again ensures easy retrieval. There is a special wooden almirah, which has about 50 to 60 wooden chambers of 7×4 inches size, for keeping each manuscript, physically separated from the other.

The three museums on the other hand have differential approaches regarding the storage and retrieval function. In Akshaya Maitreya Heritage Museum Incorporating Raja Rajaram Museum Collection, around 40% of the total collection are exhibited, while remaining 60% are kept in reserve collection. All the collections except sculptures are kept in protective glass showcases. This Museum has five Galleries:

- a) Archeology gallery-I and Archeology gallery-II comprises of sculptures of Pal and Sen Dynasty;
- b) Terracotta gallery contains terracotta figurine, temple fragments and bricks of 6th to 12th century AD;
- c) The fourth gallery has manuscripts and coins; and
- d) The fifth gallery has a rich collection of Folk art of North Bengal and Sub-Himalayan regions.

Collection at Lepcha Museum at Kalimpong mostly comprises of anthropological objects which bears the sign of richness of the Lepcha tribal culture. It includes tribal utensils, tribal musical instruments, wooden figurines, tribal ornaments and dresses, and weapons like poison arrows, hunting traps and a tortoise shell shield, some of which are as old as 150 years. A huge collection of musical instruments which are made by S T Lepcha himself is also there.

Himalayan Mountaineering Institute Museum at Darjeeling has a rich collection of models, paintings, sculpture, photographs, manuscript, autographs and books, mountaineering equipment belonging to famous mountaineers, dresses and other cultural belongings of hill folk. It has two sections i.e. the *Main Museum* and *Everest Museum*. The Everest section gives chronological history of attempts on climbing of Mt. Everest starting from 1852, this was the year when peak XV on survey of India Map was found by Mr. Radhanath Sikdhar as world's highest peak, and named after Sir George Everest the then Survey or General of India. Some important collections here includes:

- a) Equipment used by Tenzing Norgé, Sir John Hunt & Sir Edmund Hillary during 1953 expedition;
- b) An important letter from H.H The Dalai Lama, through which he granted the permission to the first British expedition on 20th December 1920.;
- c) Important Information along with original signature & equipment used in the controversial expedition of 1924 by Mallory & Irvine;
- d) Important information & Route map of first Indian Mt. Everest in 1960. Hitler's telescope is another interesting collection in this museum.

7. Preservation Scenario:

Preservation scenario in all the monasteries are more or less same. The techniques followed here are:

- The traditional manuscript wrapping technique gives twofold protection to the manuscript; firstly it protects manuscript from direct exposure to the environmental agents like dust, dirt, pollutants and moisture; secondly red colour act as insect repellent.
- All the collections are arranged separately category-wise as per their preservation priorities. Manuscripts are kept in wooden almirahs with front glass doors.
- Each rack in almirah contains labels bearing the name and part number of the manuscript it contains. This avoids damage caused by unnecessary handling.
- Manuscripts with large number of leaves are often kept in separate volumes, ensuring ease of handling. This in turn ensures less wearing and less handling. Another important factor that helped in preserving these very old manuscripts are that they are not handled frequently. For instance in Homin Ngayab Zandok Palri Phadang Tsenc Monastery, manuscripts bearing 'Commentaries of Buddha' are only used once a year, during celebration of the birth of Buddha. Another interesting point to be mentioned is that chemicals are not used for preservation.

Humidity in this region poses a major threat for the collection of museum objects, especially during monsoon. As local history collection comprises of objects of varied material composition, ranging from stone to metal, from wood to textile, from dried seed to feather, it is important to control the humidity. The main emphasis in preservation is to minimize the effect of damage caused by high moisture level in atmosphere. Some important considerations are:

- In Lepcha museum, the exhibited objects are in good condition in spite of their age. Dried bottle gourds are hanged from the ceiling, which is a tribal technique to control the temperature.
- In the other two museums, most of the collections are displayed in glass showcases, ensuring safety against deteriorating agents as well as destruction caused by human beings. All the showcases contain silica gels in glass containers which acts as dehumidifier.
- Naphthalene balls are used inside all the showcases, as the exhibits includes clothing, shoes which has organic constituents, and are thus prone to damage by biological agents.
- For safety, smoke alarm, fire extinguishers are there. Carbon di-oxide type fire extinguishers are used, as these are the safest for this type of museum collection

8. Conclusion:

The materials that museums and libraries collect echo the human spirit. Museums focus on objects, and libraries on documents, artifacts and books

and all documents concerned with human endeavour, intellectualism of thought and activity. Most repositories in North Bengal have a passive storage function, rather than an active part in national, interlending or acquisition systems. Repositories of North Bengal consist of primarily books, manuscripts and artifacts which are naturally preserved without use of any artificial preservation method, except for the AKMH Museum. In Darjeeling and Kalimpong, the artifacts are naturally preserved, the resource of libraries and museum are preserved along with regular dusting and cleaning. Pollution is one of the greatest enemy of documents, which is almost absent in North Bengal, and thus pleasant weather is the factor, which prevents the caretakers of the repositories to adopt any special type of preservation technique. But apart from positive environmental blessing, there are some negative aspects prevailing in the repositories of North Bengal. For instance in Lepcha museum, there are a large number of artifacts related to Lepcha community; but unfortunately there is very little infrastructure in the museum to sustain for long, as there is almost no help from the Government in this regard. Therefore some suggestions are put forward related to these:

- Adequate help from the Government in terms of funding and material resources is needed to proliferate the publicity and maintenance of these repositories.
- A consortia among the repositories can be developed to share the resources among themselves museums to museums and libraries to libraries.
- Proper promotion and publicity of the repositories should be done, so that people are able to know about their existence and resources.

The paper will be of interest to museum, library and other information professionals, and particularly those developing distributed and/or cross-domain digital collections. The aim is to provide a new lens through which researchers in museum studies can understand museum objects, and for LIS researchers to accept museum objects as another form of document to be studied.

References:

1. Akshaya kumar maltreya heritage museum. Retrieved November 27, 2012 from www.nbu.ac.in/museum.html
2. Buckland, M. (1991). Information as thing. *Journal of the American Society of Information Science*, 42: 351-60.
3. Himalayan mountaineering Institute. www.himalayanmountaineeringinstitute.com / Mountaineering_Museum.html. Retrieved Nov 28,2012
4. North Bengal (2012). Retrieved on December 31, 2012 from en.wikipedia.org/wiki/North_bengal
5. Report of comparative backwardness of North Bengal (2002). Retrieved on December 31, 2012 from planningcommission.nic.in/reports/sereport/ser/study_bkwardnb.pdf
6. Yarrow, A., Clubb, B. & Drapes, J. (2008). Public libraries, archives and museums: trend in collaboration and cooperation. *IFLA Professional Reports*, 108.

INFORMATION REQUIREMENT OF THE FACULTY MEMBERS OF ST. PAUL'S CATHEDRAL MISSION COLLEGE OF KOLKATA THROUGH ICT : A STUDY

TRIDIB CHATTOPADHYAY

Abstract : This paper discusses about the Information gathering habit and/or information seeking behaviour of the faculty members of St. Paul's Cathedral Mission College of Kolkata. Discussions on different aspects have shown in the tabular form. The tables are analyzed vividly one by one. It is an analytical study about the information seeking behaviour of the teachers of St. Paul's Cathedral Mission College of Kolkata from the point of view of information and communication technology.

Keywords : Information, St. Paul's Cathedral Mission College, Technology

1. Introduction:

The Information and Communication Technology has affected the information seeking behaviour of the academic community to a great extent. The electronic information resources available from a library play an important role in the accessing of the required information for its users easily and quickly. Modern techniques are used for easy and quick retrieval of digital information resources. Teachers and the research scholars are willing to get essential information in easy manner either in electronic form or in printed form. Electronic information resources are playing the vital role among the academic community for accessing the information as and when required (i.e. as per requirement).

This article deals with the information seeking behaviour of the faculty members of the St. Paul's Cathedral Mission College of Kolkata from the point of view of different aspects of information and communication technology.

2. St. Paul's Cathedral Mission College of Kolkata :

The college was established in the year 1865. It is an affiliated college under the University of Calcutta. It is a NAAC re-accredited B Cadre College. The college has 16 (sixteen) no. of undergraduate departments, out of which 11 (eleven) no. of departments have honours course and 5 (five) no. of departments have general course. NAAC peer team of UGC was recommended 3 (three) departments for introduction of Post-graduate courses. The library of this college is a store house of both the traditional information resources and modern electronic information resources. The entire collection of Church Missionary Society (CMS) is situated at the college library which contains 5000 no. of manuscripts and 3200 no. of CMS books. These documents are very useful for researchers and these resources are used by the teachers and research scholars of India and abroad.

3. Objectives of the Study :

- i) To know the frequency of using the computers by the faculty members of the college.
- ii) To know the length of experience of computer use of the faculty member of the college.

- iii) To know the preference of reading the electronic documents by the faculty members of the college.
- iv) To know about the familiarity with the electronic Information resources of the faculty members of the college.
- v) To know the satisfaction level regarding the availability of electronic information resources of the faculty members of the college.
- vi) To know the purpose of using the electronic Information resources by the faculty members of the college.

4. Scope and Coverage of the Study :

This study covers the 38 (Thirty Eight) no. of faculty members of the St. Paul's Cathedral Mission College of Kolkata. Faculty members from all the disciplines were taken for the study. The faculty members are full time faculty members of the college.

5. Methodology of the Study :

First of all, the author observed the faculty members and identified the problem. Then a questionnaire was designed for the purpose of a survey. The questionnaire was distributed among all the faculty members and interview process was carried out by the author. Factual observation process was also taken into consideration. The data collected by these processes were analyzed in the tabular form and discussed. Finally, the conclusion has drawn by the author. It is also an important point to be noted that out of 45 no. of total faculty members (Full-Time) of the college, 38 no. of faculty members were responded for the purpose of this study.

6. Data Analysis :

6.1 Table-1

Distribution of faculty members from the point of view of frequency of using the computer

Frequency of Use	No. of Faculty Members	Percentage (%)
Daily	08	21.05
2-3 Times in a Week	12	31.58
Once in a Week	08	21.05
Once In a Month	06	15.79
Rarely	04	10.50
Total	38	100.00

After analyzing the above table it can be said that 8 no. of faculty members are using the computer dally (21.05%); 12 no. of faculty members are using the computer two-three times in a week (31.58%); 8 no. of faculty members are using the computer once In a week (21.05%); 6 no. of faculty members are using

the computer one in a month (15.79%); and 4 no. of faculty members are using the computer rarely (10.53%).

6.2 Table-2

Distribution of faculty members from the point of view of experience of computer use

Years of Experience	No. of Faculty Members	Percentage (%)
1 Year – 2 Years	03	07.89
2 Years – 3 Years	05	13.16
3 Years – 4 Years	07	18.42
4 Years – 5 Years	09	23.68
5 Years and above	14	36.85
Total	38	100.00

The above table shows that, 3 no. of faculty members have 1–2 years of experience of computer use (7.89%); 5 no. of faculty members have 2–3 years of experience of computer use (13.16%); 7 no. of faculty members have 3–4 years of experience of computer use (18.42%); 9 no. of faculty members have 4–5 years of experience of computer use (23.68%); 14 no. of faculty members have 5 years and above experience of computer use (36.85%).

6.3 Table-3

Distribution of faculty members from the point of view of preference of reading the documents in their electronic form

Electronic form of Documents	No. of Faculty Members	Percentage (%)
Electronic Books	09	23.68
Electronic Journals	23	60.53
Electronic Newspapers	01	02.63
Electronic Magazines	02	05.26
Other Electronic documents like reports, circulars and others	03	07.90
Total	38	100.00

From the above table it is clear that 9 no. of faculty members are preferred to read e-books (23.68%); 23 no. of faculty members are preferred to read e-journals (60.53%); only 1 no. of faculty members is preferred to read electronic newspaper (2.63%); 2 no. of faculty members are preferred to read e-magazines (5.26%); and 3 no. of faculty members are preferred to read other types of electronic documents like reports, circulars, etc. (7.90%).

6.4 Table-4

Distribution of faculty members from the point of view of familiarity with the electronic information resources

Familiarity	No. of Faculty Members	Percentage (%)
Familiar to a great extent	25	65.78
Familiar to a some extent	09	23.69
Most unfamiliar	04	10.53
Total	38	100.00

After analyzing the above table, it can be said that 25 no. of faculty members are familiar with the electronic information resources to a great extent (65.78%); 9 no. of faculty members are familiar with the electronic information resources to some extent (23.69%); and 4 no. of faculty members are most unfamiliar with the electronic information resources (10.53%).

6.5 Table-5

Distribution of faculty members from the point of view of satisfaction regarding the availability of electronic information resources

Satisfaction Level	No. of Faculty Members	Percentage (%)
Satisfied to a great extent	23	60.53
Satisfied to some extent	12	31.57
Totally dissatisfied	03	07.90
Total	38	100.00

The above table shows that 23 no. of faculty members are satisfied to a great extent regarding the availability of electronic information resources (60.53%); 12 no. of faculty members are satisfied to some extent regarding the availability of electronic information resources (31.57%); and 3 no. of faculty members are totally dissatisfied with the available electronic information resources (7.90%).

6.6 Table-6

Distribution of faculty members from the point of view of purpose of using the electronic information resources

Purpose	No. of Faculty Members	Percentage (%)
To prepare the teaching aids	14	36.82
To know the current events in the subject area	08	21.06
To write Research Articles/Conference Papers	08	21.06
To know the present status of the subject i.e. state of the art of a particular subject	08	21.06
Total	38	100.00

From the above table it is clear that 14 no. of faculty members are using the electronic information resources for the purpose of preparation of teaching aids (36.82%); 8 no. of faculty members are using the electronic information resources for the purpose of knowing the current events in the concerned subject field (21.06%); 8 no. of faculty members are using the electronic information resources for the purpose of writing research articles and preparing conference & seminar papers (21.06); and 8 no. of faculty members are using the electronic information resources for the purpose of knowing the state of the art of concerned subject field (21.06%).

7. A few limitations regarding the access to the electronic information resources :

- (a) Lack of training and knowledge on the information and communication technology.
- (b) Limited access to the computer.
- (c) Scarcity of time of the faculty members.
- (d) Availability of effluent information through the Internet.
- (e) Slow mode of downloading the required information.

8. Findings and Conclusion :

This study shows that 12 no. of faculty members (i.e. 31.58%) are using computers 2–3 times in a week and 4 no. of faculty members (i.e. 10.53%) and rarely using the computer.

14 no. of faculty members (i.e. 36.85%) have 5 years and above experience of using the computer and 3 no. of faculty members (i.e. 7.89%) have 1–2 years of experience of computer use.

23 no. of faculty members (i.e. 60.53%) are preferred to read e-journals; 2 no. of faculty members (i.e. 5.26%) are preferred to read e-magazines; and 3 no. of faculty members (i.e. 7.90%) are preferred to read electronic reports, electronic circulars etc.; and only one number of faculty member prefers to read electronic newspapers (i.e. 2.63%).

25 no. of faculty members (i.e. 65.78%) are very much familiar with the electronic information resources and 4 no. of faculty members (10.53%) are most unfamiliar with electronic information resources.

23 no. of faculty members (60.53%) are satisfied with the available electronic information resources to a great extent and only 3 no. of faculty members (7.90%) are totally dissatisfied with the available electronic information resources.

14 no. of faculty members (36.82%) are using electronic information resources for preparing the teaching aids and 8 no. (21.06%) of faculty members are using the electronic information resources for preparing research articles, and seminar/conference papers; and 8 no. of faculty members (21.06%) are using the electronic information resources for the purpose of knowing the state of the art of the particular subject field.

More number of computers is to be installed for the purpose of academic activity; and more number of technically well equipped staff should be engaged to tackle the electronic environment. The internet connectivity should be made faster and high speed computer terminals may be installed. The UGC Resource Network Centre of the college should be well equipped with furniture and other materials so that privacy can be maintained. If faster and easier access to the electronic information resources can be provided for the faculty members they may be more satisfied and an excellent result can be expected..

9. References :

- i) A. Shokeen and S.K. Kaushik. Information seeking behaviour of social scientists of Haryana universities. Library Herald, 40(1) : 8–11, 2002.
- ii) <http://www.stpaulscmcollege.org>

GOVERNMENT AIDED HIGHER SECONDARY SCHOOL LIBRARIES IN PANIHATI OF NORTH 24 PARGANAS, WEST BENGAL: AN ANALYTICAL STUDY

SUMANA CHAKRABORTY AND ARABINDA MAITY

Abstract : This paper presents the result of an evaluative study of government aided higher secondary school libraries in Panihat of North 24 Parganas, West Bengal. A questionnaire was prepared to conduct the survey. The higher secondary school libraries are evaluated in terms of distribution of library hours, description of the resources available, different methods adopted for processing of resources and library services provided by the different school libraries. The study seeks to demonstrate the performance of secondary school libraries in Panihat. It also discusses some of the factors which have delayed the development of good library in secondary school.

Keyword : Government aided, higher secondary school, Panihat, school library

Introduction

A school library is an organized collection of school and teaching material aimed at pupils, teacher and other staff alike. It also included access to local, regional, national and international information databases. The facilities, material equipments and staff of the school library as well as its operations are organized in such a way that they support learning within the pedagogic goals of the school. The school library offers learning services, books and resources that enable all members of the school community to become critical thinkers and effective users of information in all formats and media. School Libraries link to the wider library and information network in accord with the principles in the UNESCO Public Library Manifesto. The library staff supports the use of books and other information sources, ranging from the fictional to the documentary, from print to electronic, both on-site and remote. The materials complement and enrich textbooks, teaching materials and methodologies.

As the responsibility of local, regional and national authorities, the School Library must be supported by specific legislation and policies. School Libraries must have adequate and sustained funding for trained staff, materials, technologies and facilities. Where the school library shares facilities and/or resources with another type of library, such as a public library, the unique aims of the school library must be acknowledged and maintained.

Objectives of the Study

The main objectives of the study are the following:

- I. to find out physical facilities (housing of libraries, infrastructural provision, library furniture, seating capacity etc.) of the particular libraries;
- II. to find out the various resources viz. documentary (reference sources, newspapers and magazines etc.), non-documentary (audiovisual resources), human resources of the particular libraries;
- III. to find out library policies (collection development, documents selection etc.) of the particular libraries;

- IV. To find out the various technical processing (cataloging, classification etc.) of the particular libraries.

Importance of the Study

The development of HS school libraries in Panihati, West Bengal has not been systematic. In this respect, the current scenario and structure of HS school libraries is required to survey. There are nineteen HS schools in Panihati area. The present infrastructure, school library policy, fund allocation, resource organisation, recommendation and selection, professionally and technically sound librarian, different library services are the different areas which are taken into account for studying the present status of the school libraries in this region.

This study will help the awareness of the librarian about the existing school library management and help to find out the trend of the educational programme and library programme which are interdependent in the 21st century.

Scope and Coverage:

Till now there are about 19 Higher Secondary Government aided schools in Panihati. The present study deals with all these school libraries. These are as follows:

Table-1: Name of the Higher Secondary Government Aided Schools In Panihati

Sl.No.	Name of School	Ward No.
1.	Agarpara Mahajati Vidyapith (AMV)	10
2.	Agarpara Netaji Sikshayatan for Girls (ANSG)	24
3.	Ghola High School for Boys (GHSB)	30
4.	Natagarh Sri Sri Ramkrishna Vidyamandir (NSSRV)	21
5.	Panihati Girls School (PGS)	3
6.	Panihati Trannath High School (PTHS)	3
7.	Pansila Deshbandhunagar Vidyamandir (PDV)	19
8.	Pansila Deshbandhu Vidyamandir for Girls (PDVG)	19
9.	Sodepur Chandrachur Vidyapith (SCV)	16
10.	Sodepur Deshbandh Vidyapith for Gllrs (SDVG)	16
11.	Sodepur Deshbandhu Vidyapith for Boys (SDVB)	32
12.	Sodepur High Schools (SHS)	14
13.	Sodepur Nabodaya Institute (SNI)	32
14.	Sodpur Chandrachur Vidyapith for Girls (SCVG)	16
15.	Sopdepur Sushllkrishna Sikshayatan for Girls (SSSG)	31
16.	Sukchar Karmadaksha Chandrachur Vidyapith (SKCV)	2
17.	Sukchar Satadal Girls School (SSGS)	2

18.	Ushumpur Adarsha Uchcha Vidyalaya (UAUV)	25
19.	Ushumpur Adarsha Uchcha Vidyalaya for Girls (UAUVG)	26

Methods used:

The work is mainly based on survey method that consist of the questionnaire and the observation method. There are nineteen HS schools in Panihati. A Structured questionnaire is prepared for the LIS professionals to gather information with a view to evaluate in terms of library hours, resources available, methods adopted for processing of resources and library services provided by the different school libraries. The questionnaire is distributed to nineteen HS schools. After collecting the data the inference can be drawn with the help of statistical tools like chart, diagrams etc.

Findings and Discussions

(I) Description of the resources available in the different school libraries

Table-2 : Distribution of Resources In Different School Libraries

Sl. No.	Name of The Schools	Total Numbers of Resources				
		Books (print volumes)	Electronic book (e-book)	Print subscriptions to magazines (count subscriptions not individual titles or issues)	Audio materials (CDs, audio books)	Video materials (VHS and DVDs)
1.	AMV	2500	—	—	—	—
2.	ANSG	1500	—	—	—	—
3.	GHSB	3500	—	—	—	—
4.	NSSRV	2000	—	—	1	1
5.	PGS	3200	—	—	10	10
6.	PTHS	2800	—	—	—	—
7.	PDV	2323	—	100	—	—
8.	PDVG	3200	—	—	900	—
9.	SCV	5000	—	—	10	10
10.	SDVG	4000	—	—	—	—
11.	SDVB	2000	—	—	—	—
12.	SHS	8000	—	—	901	1
13.	SNI	3600	—	—	—	—
14.	SCVG	5000	—	—	—	—
15.	SSSG	2800	—	—	—	—
16.	SKCV	3050	—	—	5	—
17.	SSGS	2500	—	250	—	—
18.	UAUV	3518	—	—	20	—
19.	UAUVG	2300	—	—	5	—

Table 2 shows various resources available in the school libraries. It also shows most of the libraries have printed books only. None of the schools have subscribed electronic books for the student in the library. Only two school libraries (PDV and SSGS) have subscribed magazines and eight school libraries (NSSRV, PGS, PDVG, SCV, SHS, SKCV, UAUUV and UAUVG) have subscribed audio material (CDs, audio books) and four school libraries (NSSRV, PGD, SCV and SHS) have subscribed video materials (VHS and DVDs) for the students in the library.

Table-3: Frequency distribution of book stock (print volumes) available

Volumes	No. of Higher Secondary Schools	Percentage
1001-2000	1	5
2001-3000	8	42
3001-4000	6	32
4001-5000	3	16
5001-6000	—	—
6001-7000	—	—
7001-8000	1	5
TOTAL	19	100

Chart 1: Total Numbers of Books (print volumes)

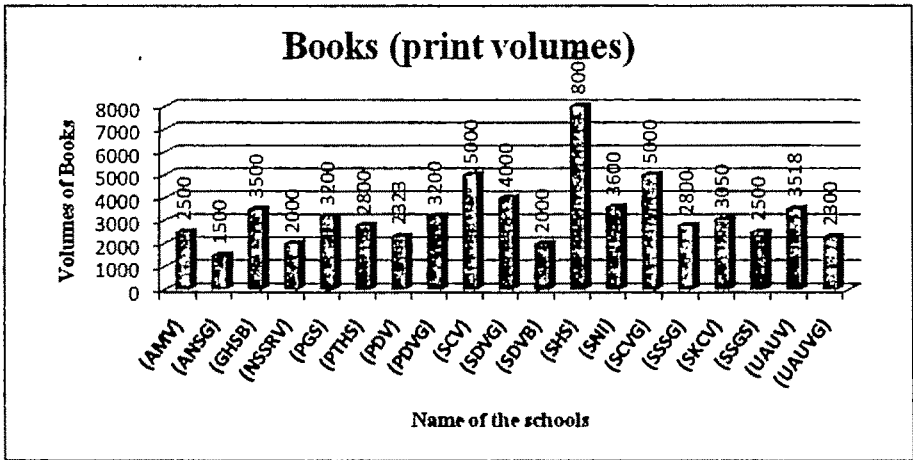


Chart 1 shows the book stock of the different school libraries ranged from 1500 to 8000. One HS school (AMV) has the least number of book stocks which is only 2500 volumes. Eight HS school libraries (AMV, NSSRV, PTHS, PDV, SDVB, SSSG, SSGS, UAUVG) have print volumes books stocks of 2500, 2000, 2800, 2323, 2000, 2800, 2500 and 2300 volumes respectively. Six HS

school libraries (GHSB, PGS, PDVG, SNI, GKCV and UAUV) have print volumes book stocks of 3500, 3200, 3600, 3050 and 3518 volumes respectively. Three HS school libraries (SCV, SDVG and SCVG) have book stocks of 5000, 4000, 5000 volumes respectively. And finally, one HS school library (SHS) has the highest print volumes book stock of 8000 volume.

Table-4 : Distribution of Audio visual and digital resources in the libraries

Sl. No.	Name of The Schools	Distribution of Audio visual and digital resources			
		Audio cassettes	Video cassettes	CDs	DVDs
1.	AMV	—	—	—	—
2.	ANSG	—	—	—	—
3.	GHSB	—	—	—	—
4.	NSSRV	—	—	—	—
5.	PGS	—	—	—	—
6.	PTHS	—	—	—	—
7.	PDV	—	—	—	—
8.	PDVG	900	—	—	—
9.	SCV	—	—	10	10
10.	SDVG	—	—	—	—
11.	SDVB	—	—	—	—
12.	SHS	900	—	1	1
13.	SNI	—	—	—	—
14.	SCVG	—	—	—	—
15.	SSSG	—	—	—	—
16.	SKCV	—	—	5	—
17.	SSGS	—	—	—	—
18.	UAUV	20	—	—	—
19.	UAUVG	—	—	5	—

Table 4 shows the availability of audio visual resources in the HS libraries. The availability of audiovisual resources in this nineteen school libraries is comparatively slower than the other sources. Few schools have possessed audio visual resources in their libraries. None of the HS school libraries have video cassettes and DVDs in their libraries. Only three school libraries have (PDVG, SHS, and UAUV) audio cassettes in the libraries and the numbers are 900, 900 and 20 respectively. SCV has the highest number of CDs in their libraries and the number is 10. Two school libraries (SKCV and UAUVG)

have CDs in their libraries and the number is 5. Rest of the schools do not have any CDs.

Table-5: Different categories of the Human Resources in different school libraries

Sl. No.	Name of The Schools	Human Resource		
		LIS Professional	Teacher Librarian	Non-Professional
1.	AMV	✓	—	—
2.	ANSG	✓	—	—
3.	GHSB	✓	—	—
4.	NSSRV	✓	—	—
5.	PGS	✓	—	—
6.	PTHS	✓	—	—
7.	PDV	✓	—	✓
8.	PDVG	✓	—	—
9.	SCV	✓	—	—
10.	SDVG	✓	—	—
11.	SDVB	✓	—	—
12.	SHS	✓	—	—
13.	SNI	✓	—	✓
14.	SCVG	✓	—	—
15.	SSSG	✓	—	—
16.	SKCV	✓	—	—
17.	SSGS	—	—	✓
18.	UAUV	✓	—	—
19.	UAUVG	✓	—	—
	TOTAL	16	0	03
	Percentage	84%	—	16%

Table 5 shows the different categories of the Human Resources in different school libraries. It represents the fact that most of the schools have qualified LIS professional in their respective libraries. Few school libraries do not have qualified LIS professional. 84% HS school libraries in Panihati region, West Bengal have qualified LIS professionals which are very encouraging. There are only 16% HS school libraries which are still without professional manpower. This (16%) school libraries are run by the non professionals or part time basis.

Table-6 : Qualifications of librarians in the different school libraries

Sl. No	Name of the Schools	LIS Prof.	Teacher Librarian	Non-Prof.	Ph.D	M.Phil	M.L.I.Sc	B.L.I.Sc	C.Lib.Sc	Bachelors Degree other than LIS	10+2	10th
1.	AMV	✓	—	—	—	—	✓	—	—	—	—	—
2.	ANSG	✓	—	—	—	—	✓	—	—	—	—	—
3.	GHSB	✓	—	—	—	—	—	✓	—	—	—	—
4.	NSSRV	✓	—	—	—	—	—	✓	—	—	—	—
5.	PGS	✓	—	—	—	—	✓	—	—	—	—	—
6.	PTHS	✓	—	—	—	—	—	✓	—	—	—	—
7.	PDV	—	—	✓	—	—	—	—	—	✓	—	—
8.	PDVG	✓	—	—	—	—	✓	—	—	—	—	—
9.	SCV	✓	—	—	—	—	✓	—	—	—	—	—
10.	SDVG	✓	—	—	—	—	✓	—	—	—	—	—
11.	SDVB	✓	—	—	—	—	✓	—	—	—	—	—
12.	SHS	✓	—	—	—	—	—	✓	—	—	—	—
13.	SNI	—	—	✓	—	—	—	—	—	✓	—	—
14.	SCVG	✓	—	—	—	✓	—	—	—	—	—	—
15.	SSSG	✓	—	—	—	—	✓	—	—	—	—	—
16.	SKCV	✓	—	—	—	—	—	✓	—	—	—	—
17.	SSGS	—	—	✓	—	—	—	—	—	✓	—	—
18.	UAUV	✓	—	—	—	—	—	✓	—	—	—	—
19.	UAUVG	✓	—	—	—	—	✓	—	—	—	—	—
	TOTAL	16	—	03	—	01	9	6	—	03	—	—
	Percentage	84%	—	16%	—	5%	47%	32%	—	16%	—	—

Table 6 shows the qualifications of librarians in the different school libraries. Firstly it has categorized to LIS professionals, Teacher librarian and Non-professionals. Then the qualification of the respective category is demonstrated. It represents a convincing result in case of qualification of the library professionals. The data reveals that about 32% of librarians are possessed BLISc, 47% MLISc, 5% M.Phil as the highest qualification. Only about 15% of HS school librarian possessed simple graduate degree.

(II) Library services provided by the different school libraries :

Table-7 : Different services provided by the school libraries

Sl No.	Name of The Schools	Searching books	Reprography	Internet browsing	Newspaper clipping	New arrivals	Audio visual service
1.	AMV	✓	—	—	—	—	—
2.	ANSG	✓	—	—	—	✓	—
3.	GHSB	✓	—	—	—	—	—
4.	NSSRV	✓	—	—	—	✓	—
5.	PGS	✓	—	—	—	✓	—
6.	PTHS	✓	—	—	—	—	—
7.	PDV	✓	—	—	—	✓	—
8.	PDVG	✓	—	—	—	✓	✓
9.	SCV	✓	—	—	—	—	✓
10.	SDVG	✓	—	—	—	—	—
11.	SDVB	✓	—	—	—	✓	—
12.	SHS	✓	—	✓	—	✓	—
13.	SNI	✓	—	—	—	—	—
14.	SCVG	✓	—	—	—	✓	—
15.	SSSG	✓	—	—	—	✓	—
16.	SKCV	✓	—	—	—	✓	—
17.	SSGS	✓	—	—	—	✓	—
18.	UAUV	✓	✓	—	✓	✓	—
19.	UAUVG	✓	—	—	—	✓	—
	TOTAL	19	01	01	01	13	02
	Percentage	100%	5%	6%	6%	72%	11%

Table 7 shows that the HS school libraries hardly provide any services other than circulation of books. The current table reveals that all nineteen school libraries provide some sort of assistance in finding books for the students. It shows that a small percentage of school libraries provide other services viz. reprography (5%), internet browsing (6%), newspaper clipping (6%) and audio visual service (11). Majority of schools (72%) provide new arrivals services on verbally like students are informed about the latest arrivals of books by the librarian verbally only.

Table-8: Circulation service In the different libraries

Students Teachers Non-teaching Staff

S1. No	Name of The Schools	No. of Books Issued	No. of Days	Late Fine Charges(Rs. Per Day)	No. of Books Issued	No. of Days	Late Fine Charges(Rs. Per Day)	No. of Books Issued	No. of Days	Late Fine Charges(Rs. Per Day)
1.	AMV	1	7	—	2	30	—	2	30	—
2.	ANSG	1	14	1/-	1	30	—	1	30	—
3.	GHSB	1	7	—	2	30	—	2	30	—
4.	NSSRV	2	7	1/-	4	30	—	4	30	—
5.	PGS	1	7	—	2	30	—	2	30	—
6.	PTHS	1	14	1/-	1	30	—	1	30	—
7.	PDV	1	14	—	3	30	—	1	14	—
8.	PDVG	1	7	5/-	3	30	—	2	30	—
9.	SCV	1	7	—	5	30	—	5	30	—
10.	SDVG	1	14	1/-	1	30	—	1	30	—
11.	SDVB	1	15	—	2	30	—	2	30	—
12.	SHS	1	15	—	5	30	—	5	30	—
13.	SNI	1	7	—	2	30	—	2	30	—
14.	SCVG	1	7	—	5	30	—	5	7	—
15.	SSSG	2	7	1/-	1	15	—	1	15	—
16.	SKCV	1	7	—	2	30	—	2	30	—
17.	SSGS	1	7	—	2	30	—	2	30	—
18.	UAUV	1	15	—	2	30	—	2	30	—
19.	UAUVG	1	15	—	5	30	—	5	30	—

Table 8 shows the number of books issued to students, teachers and non-teaching staff and the duration of the loan also varies a great deal. The number of books issued to students on average range between one to two and the duration for student 7-15 days while the teaching and non-teaching staff can issue 1-5 books for a month.

The data reveals that late fine charges are there for unduly returned books in those schools. But, from the personal interview with the librarian, it is noticed that students were hardly charged fine on unduly returned books as majority of students have very poor financial background. It is difficult for them to pay fine for the books. Late fine charges for teaching and non-teaching staff do not exist.

Table-9 : Access to resources in the libraries

Sl. No.	Name of The Schools	Open access to all	Open access to employees only	Closed access for all
1.	AMV	—	—	✓
2.	ANSG	✓	—	—
3.	GHSB	—	—	✓
4.	NSSRV	—	✓	—
5.	PGS	—	—	✓
6.	PTHS	—	✓	—
7.	PDV	—	—	✓
8.	PDVG	✓	—	—
9.	SCV	—	—	✓
10.	SDVG	—	—	✓
11.	SDVB	—	✓	—
12.	SHS	—	✓	—
13.	SNI	—	✓	—
14.	SCVG	✓	—	—
15.	SSSG	✓	—	—
16.	SKCV	—	✓	—
17.	SSGS	—	—	✓
18.	UAUV	—	—	✓
19.	UAUVG	—	—	✓
	TOTAL	04	06	09
	Percentage	21%	32%	47%

Table 9 shows the access to resources in the different HS school libraries. It reveals the fact that the access to resources of the nineteen HS school libraries varies a great deal. It reveals that majority of school i.e. 47% follow closed access systems. Only 21% of school library adopt open access systems while 32% of school libraries provide open access to employees only.

Observation shows that closed access systems discourage students to come to the library and lend books from the library; whereas in open access systems, students can search books and other sources available in the library. But, in the HS schools the librarian is the one person who is doing all the work from issuing books to stacking in one hand, it is difficult to manage open access systems to all.

Table-10 : Availability of Photocopying services in the libraries

Sl. No.	Name of The Schools	Present	Absent
1.	AMV	—	✓
2.	ANSG	—	✓
3.	GHSB	—	✓
4.	NSSRV	—	✓
5.	PGS	—	✓
6.	PTHS	—	✓
7.	PDV	—	✓
8.	PDVG	—	✓
9.	SCV	—	✓
10.	SDVG	—	✓
11.	SDVB	—	✓
12.	SHS	—	✓
13.	SNI	—	✓
14.	SCVG	—	✓
15.	SSSG	—	✓
16.	SKCV	—	✓
17.	SSGS	—	✓
18.	UAUV	✓	—
19.	UAUVG	—	✓
	TOTAL	01	18
	Percentage	5%	95%

Table 10 shows the photocopying services available in the different HS school libraries. Data shows a discouraging result. It reveals that the majority of schools (95%) do not provide photocopying services to the students. Only 5% of schools provide photocopying services. Now-a-days, students are fond of photocopying services. Depriving students from this service is highly discouraging.

Observation reveals that fund is the main reason behind this. Most of the Government aided schools do not have enough funds to purchase books in regular intervals. Therefore, it is not possible for the Govt.-aided schools to buy a photocopy machine and provide services to the students.

Table-11 : Availability of Computer Databases of library materials in the different school libraries

Sl. No.	Name of The Schools	Excel	Access	Do not maintain
1.	AMV	—	—	✓
2.	ANSG	—	—	✓
3.	GHSB	—	—	✓
4.	NSSRV	—	—	✓
5.	PGS	—	—	✓
6.	PTHS	—	—	✓
7.	PDV	—	—	✓
8.	PDVG	—	—	✓
9.	SCV	—	—	✓
10.	SDVG	—	—	✓
11.	SDVB	—	—	✓
12.	SHS	—	—	✓
13.	SNI	—	—	✓
14.	SCVG	—	—	✓
15.	SSSG	—	—	✓
16.	SKCV	—	—	✓
17.	SSGS	—	—	✓
18.	UAUV	—	—	✓
19.	UAUVG	—	—	✓
	TOTAL	0	0	19
	Percentage	—	—	100%

Table 11 reveals the status of the availability of computer databases of all the library materials in the Govt.-aided schools of Panihati region, West Bengal. SHS has provided computer for their school library, but it is placed unused. Other than SHS no HS school has provided computer for their libraries. Therefore, there is no scope to maintain databases for the library materials in the school library.

Conclusion And Suggestions

In conclusion it may be said that, most of the HS school libraries through Panihati, West Bengal is poor in structure. Their greatest defect is lack of proper planning and they are inadequately housed in the library building. This uneven

development is due to the fact that very little money is provided for their development. Since the quality of the book stock and unwillingness of the library staff to provide services is another drawback of this situation. Grant provided by the Government for the development of school libraries which is inadequate as the cost of books is high.

Observation found that the HS school libraries are required to raise the stock to enhance the class room reading and overall reading habits of the student. It would provide the opportunities to get access different kinds of books in their own school libraries. And also this would increase the library visits of the students apart from schedule library classes. In this digital age, students are fond of digital and audio visual resources rather than printed sources. It is suggested to increase the number of digital and audio visual resources in the school libraries. Financial grant is one of the barrier to subscribe digital and audio visual resources.

Many a time it has been noticed that some schools have computers, but due to the static budget, connectivity to the internet is not widespread and student access is limited. Use of e-resources and other electronic gadgets like slide projector, film projector, VCD/DVD, audio player/recorder, overhead projector and LCD bring the better results in teaching and learning process, but not affordable to all school libraries. It is the high time for the Government and the Authority of the schools to found a pragmatic solution of these problems; then only academic libraries can effectively and efficiently play their role in the field of teaching and learning and other development works of the country.

For providing services Government aided Higher Secondary school libraries should take Initiative for Implementing the following steps:

- All the HS school libraries needs to build a Library Advisory Committee with the following terms of reference:
 - I. to recommend suitable budgetary provisions for the library and resource centre;
 - II. to formulate policy in relation to the development of resources for reading, reference and projects;
 - III. to develop a general programme of library service to suit the interest and requirements of different teaching departments of the school;
 - iv. to frame, review and approve library rules.
- The collaboration between the teaching and library professions in the visited school libraries should be needed;
- The Department of School Education, Govt. of West Bengal should provide the basic Infrastructure as well as enough funds and other material resources for the development of higher secondary school libraries in this state.
- The Department of School Education, Govt. of West Bengal should establish standards for higher secondary school libraries and should ensure compliance with such standards.

- School library association should be formed as a special section of the state, in order to provide HS school libraries in the state with a forum for the discussion of their problems.
- Indian Library Association should organize regular courses, seminars and other training programmes for HS school librarians in order to enhance their performance.
- Availability of computers with Internet access is important for the students in the higher secondary school library.

References

1. IFLA/UNESCO (2005). School library guidelines, IFLA. Retrieved August 14, 2012. from: <http://archive.ifla.org/VII/s11/pubs/sguide02.pdf>
2. IFLA/UNESCO The school library manifesto: the school library in teaching and learning for all. IFLA, 2000. Retrieve from www.ifla.org/VII/s11/pubs/manifest.htm, www.ifla.org/VII/s8?unesco/eng.htm
3. Kumar, S. (1997). Problems of school libraries in present day education: some observations and solutions. *Annals of Library Science and Documentation*. 44.4, 140-142.
4. Kumar, Sunil. K. (1994). Higher secondary education and school libraries in Kerala.
5. Martinez, J. (1998). School libraries go global: an update on the Texas Library Connection. *Texas Library Journal*. 74.1, p. 22-23.
6. Molnar, Ivett. (2012). Electronic Databases at the CEU Library. *Tudományos és Muszáj Tájékoztatás*. 58, 11-12.
7. Mukhopadhyay, Lopita. (2010). An Evaluation Study of School Libraries in and Around Kolkata. Department of Library and Information Science, University of Calcutta.
8. National Council for Education Research and Training (2002). Seventh All India School Education Survey. NCERT. Retrieved September 13, 2012 from: <http://www.bardhaman.nic.in/education/schudir.asp>

KNOWLEDGE HUB: TRANSFORMATION OF THE LIBRARY AND INFORMATION CENTRES IN THE ICT ENVIRONMENT

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Abstract : Information technology and information explosion has affected a sea change in the characteristics and the services of the Library. Libraries are trying to cope up through Digital Library projects. However, the Digital Library is explicit in nature. This paper attempts to outline a library service that caters to both explicit and tacit knowledge. The main objectives of the work are to define Knowledge Hub; to describe the impact of Knowledge Hub on libraries; and to describe Knowledge Hub from logical and technological points of view. The technological architecture has been designed with the example of Indian Biotechnology Knowledge Hub.

Keywords : Knowledge Management; Knowledge Hub

1. Introduction

Information is currently recognized as a powerful key resource by all sectors in the Information-based society that we live in. Everyone needs information. Information is continuously being generated at an unbelievable rate. To denote the phenomenon, the term "Information Explosion" is used. It has created serious problems of communication and is getting more complex and difficult to manage by the day.

The Library and Information profession is one of the most challenging professions in the Information Society, combining expertise in Information Management with Information Communication Technology (ICT) competences. ICT has tremendous impact on Library operations, resources, services, staff and users. Library professionals are demanding extensive and effective utilization of ICT in order to survive and meet the changing complex information needs of the user community. Thaker and Rawal (2007) argued that ICT was a driving force for change in libraries and information centres. It had changed the role of library and information professionals who are responsible for delivering online information service as per actual user needs. Librarians and information professionals, thus, need to become information navigators.

2. Objectives of the Work

- 1) To discuss the necessity of transforming Library and Information Centres into Knowledge Hubs;
- 2) To suitably modify the concept of Knowledge Hub for the purpose of this study;
- 3) To describe the impact of Knowledge Hubs on libraries; and
- 4) To describe the Knowledge Hub from a logical and technological point of view.

3. The necessity of transforming Library and Information centres into Knowledge Hubs

Libraries are trying their best to cope up with the changes. Information

Technology and Information Explosion have impacted huge changes in the characteristics and the services of the Library. The Library has gradually evolved to the Information Centre. Library professionals are now engaged in transforming the physical library to the digital library and the virtual library. The Internet and the World Wide Web (WWW) are now trying to be complete substitutes of the Library as storehouse of information. However, they are targeting on Information rather than Knowledge. The proliferation of Digital Libraries and the Internet also gives rise to some questions:

- 1) Today anyone can post a message in an online discussion group. In such an environment, information appears one day and can alter or disappear in the next day. Such information is not usually structured. In this situation how can we give a citation? How do we organize such information? (Rao & Suma, 1996, p.187);
- 2) Whenever we want to find a particular topic we have to sift through the huge burden of information on related topics as well. As online information is generally not structured, we have to spend a lot of time to collect our targeted information. This is totally against the fourth law of Library and Information Science, i.e., save the time of the user;
- 3) In general, knowledge-based assets fall into one of two categories: explicit and tacit. As a general rule of thumb, explicit knowledge consists of anything that can be documented, archived or codified. But tacit knowledge is the know-how contained in people's brain. The information we got from the Digital Library and Internet is only explicit in nature. Then how can we recognize, generate, share and manage the tacit knowledge? (Levinson, 2008, para. 2).

These questions have provided a good environment for library development. Moreover, as information and knowledge become important productive factors for the modern economic system, the society will inevitably require intensified management of both information and knowledge. There is a flood of available information. Collecting grains from chaff is a profound and painful task. Cooking those grains for cognitive consumption is a profound job. Experience and learning need to be assimilated together. Finally, there is the question of applying this assimilated material to the required purpose at hand. This is actually the core philosophy of Knowledge Management (Datta, 2006, p.3). This philosophy has to be applicable in Library service as well. Academic libraries of higher education and special libraries will find larger and wider applications for Knowledge Management (KM) because they carry on activities that are Knowledge Management intensive: almost in all cases they mainly serve the need of a particular society which is related to:

- i. research that relates to the creation of knowledge,
- ii. teaching that concerns transmission of knowledge,
- iii. Institutional research that pertains to the use of knowledge for decision making.

All the above tasks are well within the boundaries of Knowledge

Management, which drives the need for better and faster decision making tools and methods (Luan, 2002, para1).

In the near future academic and special libraries will attempt to serve their users in the following two manners:

1. storing physical and digitized information;
2. serving as a place of direct teaching and consulting through Satellite Interactive Terminal Process or by Open Access Forum through internet.

While the first will generate and transfer explicit knowledge, the second will transfer tacit knowledge—thus transforming the Library and/or Information Centre to a Knowledge Processing Unit (Shanhong, 2000).

4. The Concept of Knowledge Hub

Association for Progressive Communications (2011) defines Knowledge Hub as “A hub is a centre of activity or an interest or a focal point. A Knowledge Hub is therefore a centre or focal point for the exchange of knowledge, support, development and ideas” (para. 1).

Evers (2008) defines:

Knowledge hubs are local innovation systems that are nodes in networks of knowledge production and knowledge sharing. They are characterized by high connectedness and high internal and external networking and knowledge sharing capabilities. As meeting point of communities of knowledge and interest, Knowledge hubs fulfill three major functions: to generate knowledge, to transfer knowledge to sites of application; and to transmit knowledge to other people through education and training. (para. 24).

We are familiar with the term ‘Knowledge Portal’. Knowledge Portal and Knowledge Hub carry almost similar roles in the online environment. Both are used as gateway to other links. Nevertheless, there are some differences between them. Jisc (n.d.) differentiate them:

Knowledge Hub provides access to descriptions of and links to other sites on the web. They carry out a similar role to portals as they bring information together, but this information is only about the sources of content, not the actual content itself. Knowledge Hub allows you to discover where the content is, but they still require you to go to the site of the content to get it. Knowledge Portals bring the content to you. (para. 2).

Beside this, normally Knowledge management is applicable to an in-house environment. Knowledge Portals are defined with respect to a community of users who share common tasks and interests. This is especially true for internal corporate portals, where different functional and organizational groups and lines of business may have substantially different needs for information access and organization. Examples include sales and marketing, best practices, competitive intelligence, research and development, and general corporate resources. So one can say the main objective of Knowledge Portal is to the development of the organization. The main interest of this work is on a subject ‘Biotechnology’ (it may be applicable within other subjects also) instead of an organization.

One or more organizations directly or persons from different organizations may join in this hub. This work provides link to other sources. So the term 'Knowledge Hub' has been used instead of 'Knowledge Portal'.

5. Impact of Knowledge Hub on Libraries

Successful Knowledge hub architecture can transform a Library into a "learning centre" or a virtual tutorial or even a research or project support gateway and platform—by incorporating and utilizing KM ideas. Doing this would automatically involve the concept of globalization of KM. Two things seem to be missing in such considerations. First, that a library has always been a learning organization for its members (clients, customers, users). Second, that some sort of KM practice is essential to achieve the goals of an active modern learning organization. Thus, KM in libraries not only requires returning the libraries to their original historical role as supportive learning centres but also reorganizing their "netted" component (Intranet and extranet together) as Interactive and shared learning centres. Library KM, as we envisage here, demands several paradigm shifts. The library knowledge manager—in consonance with KM paradigms—becomes a partner, a gatekeeper for customers, not simply a provider of information. A general simplified schema of this knowledge transfer mechanism is presented below.

6. Logical Architecture of Knowledge Hub

From the logical point of view, the Knowledge hub has three layers: Users, Services and Knowledge Base. The Knowledge Hub can be represented by a set of services through which the users of the network interact with each other and with the knowledge base. Services are linked to knowledge processes they enable; the knowledge base is the 'content' of the system and therefore it is deeply linked to the knowledge sources of the network.

In this way, the Knowledge Hub is configured as an Internet-based knowledge management system aimed to:

- empower and extend the network of relationships existing among the persons involved in different organizations;
- enhance the frequency and the intensity of knowledge exchanges;
- activate inter-organizational learning processes and knowledge-sharing processes;
- support knowledge-exploration processes considering the emergent knowledge of the network.

Users

Users denote the users of the Knowledge Hub, who evolve towards learning organizations, where Individuals can improve their capacities to create results, where there is potential to generate new mindsets, where people knows how to learn together. In this way, each user of the network is able to define visions, to create, acquire and share knowledge, to apply knowledge for defining strategies and for obtaining results, to set up and promote mental models. In this way a user is able to:

- acquire, test and apply new knowledge and exploit the results of learning processes associated;
- learn from past experiences and take benefits from past errors and successes;
- learn from others;
- amplify their learning spaces in the external environment;
- avoid duplication of work.

Services

The services are designed and configured according to knowledge processes they enable:

- Knowledge store: this is the knowledge storage process into the knowledge base, after validating and indexing processes;
- Knowledge generate: this covers the knowledge retrieval, acquisition and creation processes;
- Knowledge distribute: this covers the knowledge distribution, sharing and comparison processes;
- Knowledge apply: this is the application process of created/exchanged knowledge of the network for designing and building new products, for experimenting new processes, and for activating new business strategies.

Knowledge Base

The knowledge base is the Knowledge Repository of the network and it contains the knowledge heritage associated with cognitive sources:

• Knowledge in user: this is the knowledge of current and potential users in terms of their profiles (with static and dynamic components), their preferences, and their explicit and implicit needs, their feedbacks. This source is very important because it allows understanding new potential ideas and suggestions to elaborate and systemize for designing and creating new products/services or for improving the existing ones.

- Knowledge in Services: this is the knowledge embedded in services offered by the organizations belonging to the network;
- Knowledge in Relationships: this is the knowledge embedded into the structural and social links of the network nodes;
- Organizational Memory: this is the knowledge of the network, which inspires each node to formulate the organizational strategies.
- Knowledge in external Environment: this is the knowledge heritage external to the network and potentially linkable to the knowledge base of the network.

A very important feature of the knowledge base is that each knowledge object is semantically indexed using a set of domain ontology. This enables processes of 'knowledge standardization' starting from the entire knowledge

heritage available into the network. In this way the building and maintaining processes of the ontology generate many advantages related both to the richness of the knowledge flows among nodes and to the enlargement potentialities of network boundaries.

7. Technological Model of the Knowledge Hub

Indian Biotechnology Knowledge Hub (IBKH) has been developed by the scholar as an 'Experimental prototype Knowledge Hub' on Biotechnology in India with a description of its logical and technological architecture. The hub has been designed by hyper linking explicit knowledge of different databases and by trying to transform tacit and implicit knowledge to explicit knowledge. The hub has been designed as a knowledge processing system and the stages of knowledge management cycle is applicable through this hub. To check the model the hub has been hosted in a free web hosting site 'frihost.com'. One may search this hub through <http://www.biotechindia.frihost.org/>. But all fields are not active in this free hosting site. IBKH consists of following areas:

• Home Page of the Hub

The 'Indian Biotechnology Knowledge Hub (IBKH)' homepage shows the various components of the user interface. It features a standardized, clear navigation bar and direct links to all relevant components. In the central point of the home page there is a 'welcome note' to the users. Users can get access other hyperlinked areas only after successful login.

• Members' Zone : This comprises three parts:

- **Existing User** : The Hub can be accessed only after a successful log-in and password validation. Therefore, existing users will be requested to register their user names and passwords in this zone.

- **New User** : New users will be requested to provide their details in a prescribed format and to submit it. After validation, a welcome mail will be sent to their e-mail id.

- **Member Database** : Member Database is the storehouse of the Member's information. After registration, each user will be able to check this database.

- **Resources** : Under IBKH Resources category, learning resource links are available. It covers the following areas:

Article : Collection and links of general rules and acts on Biotechnology. Links to the Online Sources where one can find Biotechnology related articles.

Books : Links to widely accepted sources for list and full-text online availability for Biotechnology books.

Database: Links to sources where Biotechnology-related databases will be available.

Journal: Links to journals on Biotechnology published in India and enlisted in Ulrich's Periodicals directory. Here, links to Open-Access Journals on Biotechnology are also available.

Patent: Controller design of Patents design and Trademarks, Govt. of India; FPO, a free patent online search engine; Patents facilitating Centre, free online access to Indian Patent database; Patestate, a collaborative effort between Intellectual Property Management Division of CSIR, Patent Inspection Centre at NCL Library and URDIP. Beside this a list of Patents granted by DBT is also available.

Other Publications: Links to Indian Science Abstracts and CSIR laboratories of Biological Sciences are available. List of publications by personnel from DBT sponsored Institutions are also available.

Relevant Links: Links of various organizations which are very helpful for Biotechnology learning and research works, such as: DBT, CSIR, Bio-link.org, Online Dictionary, Online Encyclopaedias, etc. are available in this area.

Software: Some links are provided in the hub, which are the sources for biotechnology project-related software.

• Community

The IBKH Community is a communication component. Therefore, most of the content under this section is user-generated. This is the most important area of the hub, since it enables users to get in touch with other members of the community in a much more personal way and share their knowledge with each other. This feature will also help the subject development of the hub.

The IBKH Community consists of the following areas:

Ask an Expert: Users will be able to send a query to an expert who is also the member of this hub.

Discussion Board: Users will be able to post and reply to messages on a particular topic.

E-mail: Users will be able to communicate with other users through e-mail.

Short message: This is just a chat room. It allows users to contact with other online users and to send short messages to one or more of them.

• Biotechnology@India

This area contains information on higher education on Biotechnology in India and consists of four parts:

- DBT Sponsored Universities/Institution
- AICTE Approved Institutions.
- CSIR Laboratories on Biological Sciences
- Distance Education Courses on Biotechnology in India

• Future@India

This is primarily a job and conference-related area. This area contains:

- **Biotechnology Industry In India:** Short description and links to various Biotech and Pharmaceutical companies of India.

- **Conference Calendar** : Information related to National and International Conferences on Biotechnology are available.
- **Job Searching** : Careers available for Biotechnology aspirants are provided under this link. CV uploading feature is also available.
- **Publish Yourself** : This area contains following two areas:

News Service: The news service guarantees daily up-to-date information according to the area of specialization. The weekly news is a push system connected with the news service. This system sends by e-mail (to individuals who have explicitly indicated their own interest in a particular content area) all the news collected in the current week and related to the specific issue. Users have to submit their request for News Service through this link.

Submit writings: One of the main functionalities available in the Knowledge Hub is the editorial content publishing, through which it is possible to publish papers, reviews; editorials and whatever can enrich the knowledge base by the user. In this way, the system allows adding new pages to the portal with ease. Every new page to be published is inserted through a simple form to be filled in online—no technical competencies are required for such tasks.

- **Suggestion** : This page will request the users to submit their suggestion for improving the hub.
- **Contact** : The contact details of the designer of this hub are available.

8. Difference between Knowledge Hub and General Website

IBKH is the gateway to various Biotechnology resources and services and it has a specific set of users: Master degree level or Research scholar level—whereas a general website is meant for all and has a wider set of users. We can regard IBKH as the entry point for different websites relating to Biotechnology information. IBKH and General Websites may be differentiated through the following characteristics:

- **Authentication**: IBKH provides facility of Logging-in. To access IBKH, New User registration and successful logging-in is required. IBKH provides information based on the user. Websites normally required no Logging-in, until and unless it becomes a portal. For example, Gmail requires Logging-in but Google not. Gmail is a portal for mail service while Google is merely a search site.
- **Personalization**: The contents of IBKH are limited and focussed; it only serves the needs of Biotechnology users of India. Users Interested in subjects related to Biotechnology may benefit from it, but for other users it is useless. In contrast, the contents of a Website are general and extensive in nature and its target users are not so specific.
- **Customization**: Through IBKH, a user may select and organize the material he or she wants to access. Websites, in contrast, are searchable but not customizable.

9. Association between Knowledge Hub subsystems and Knowledge Management Processes

While evaluating the existing Knowledge Management processes we observe that there are four phases in a Knowledge Management Cycle:

- i. Origination of Knowledge;
- ii. Storage of Knowledge;
- iii. Distribution of Knowledge; and
- iv. Application of Knowledge.

Each of the above mentioned phases of the Knowledge Management Process is associated with the IBKH subsystems.

IBKH Homepage: Homepage is the entry page to IBKH. It provides an overview of the various contents of the IBKH rather than containing Knowledge Itself. An editorial welcomes Users and directs them to the other important sections of IBKH. In this way it is the area to Store Knowledge.

IBKH Resources: This area mainly provides links to Learning resources on Biotechnology. It provides links to Article, Journal, Book, Publication, Patent and Software sources. It also stores collection of General articles, Patents Granted in India, Publication of Different Institutions. Thus, the function of this area is to Store Knowledge.

IBKH Community: IBKH community is a communication component. Most content inside this section is user generated. 'Ask an expert' and E-mail option helps the users make contact with other users and to obtain valuable suggestion and knowledge. It distributes Knowledge from Expert to New user. The Discussion Board is like a common Forum. Users will be able to create new topic and discuss this topic with other users. Therefore, it supports three Knowledge management processes: Knowledge Origination, Knowledge Storage and Knowledge Distribution. Short Message is like Chat. Users will be able to Originate and Distribute Knowledge through the Short Message feature.

Biotechnology@India: It mainly covers Information related to higher education on Biotechnology in India. Links to various Institutions and courses are available through this area. This is, therefore, a Knowledge Storage process.

Future@India: This is mainly an area related to jobs and conferences. Users will be able to get news related to job opportunities in the field of Biotechnology in India. News related to upcoming conferences and workshops are also available here. Hence, this is also a Knowledge Storage process.

Publish Yourself: It has two parts—News Service and Submit Writings. News Service guarantees daily up-to-date information according to the area of specialization. The weekly news is a push system connected with News Service. It will originate new knowledge and distribute it to other users. Submit Writings allow users to publish papers, reviews, editorials and whatever can enrich the knowledge base. Thus, it supports three processes: Knowledge Origination, Storage as well as Distribution.

Suggestion: This area will allow users to submit their suggestions and feedback, based on which the Hub may enrich its services. Thereby, It supports knowledge processes in two ways—Knowledge Origination and Knowledge Application.

The following table presents the association between knowledge processes and Knowledge hub subsystems:

Knowledge Hub sub system	Originate knowledge	Store knowledge	Distribute knowledge	Apply knowledge
Resources area		✓		
Community area				
i. Ask an expert			✓	
ii. Discussion Board	✓	✓	✓	
iii. E-mail			✓	
iv. Short Message	✓		✓	
v. Video Conferencing	✓		✓	✓
Biotechnology@India		✓		
Future@India		✓		
Publish yourself				
i. News service	✓		✓	
ii. Submit writings	✓	✓		✓
Suggestion	✓			✓

10. Conclusion

The IBKH is designed as a prototype model to show how the concept of knowledge management works in a particular subject. It can be replicated on large scale engaging multiple organizations forming a community or unit as a whole. For the purpose of this study, Biotechnology has been used as a sample subject. The model can, however, be applied to other subjects as well. Using modern tools and techniques, such as video-conferencing, Satellite Interactive Terminal Process and Internet, the hub can serve as a place of direct teaching and consulting. Information Technology has put library and Information professionals into a competitive and compelling situation wherein they require to fulfil the ever-increasing information needs of users in the most effective and efficient manner. Knowledge Hub may be a ray of hope to them. It can certainly help them through the situation. At the same time, Knowledge Hub will be beneficial to the users (knowledge-seekers) as well. On a large scale, Knowledge Hub would be a valuable tool in the hands of knowledge seekers, allowing them better utilization of existing knowledge and creation of new knowledge. By using such hubs, different levels of users interested in a particular subject may get vital and in-depth knowledge on the subject. The hub brings to them resources and links that are essential for learning and scholarship.

References

- Association for Progressive Communications. (2011). *Knowledge hub*. Retrieved from www.apc.org/en/glossary/term/975.
- Datta, S. (2006). *An approach to Knowledge Management (KM) problems and solutions for Indian situations: a conceptual/ operational model for Library KM* (Unpublished doctoral dissertation). University of Calcutta, Kolkata, India.
- Jisc. (2009, September 24). Portals: Frequently asked questions. Retrieved from <http://www.jisc.ac.uk/whatwedo/programmes/portals/faq.aspx>.
- Levinson, M. (2008, May 14). The ABCs of KM [Web log message]. Retrieved from <http://www.km-articles.blogspot.com>.
- Luan, J. (2002, June). *Data mining and knowledge management in higher education-Potential applications*. Paper presented at the Annual Forum for the Association for Institutional Research. Retrieved from www.eric.ed.gov/PDFS/ED474143.pdf
- Rao, I.K.R., & Suma, P. (1996). Digital libraries: Challenges and Issues. In N. M. Malwad, T.B. Rajashekar, I.K.R. Rao & N.V. Satyanarayana (Eds.), *Digital libraries: Dynamic storehouse of digitized information* (pp. 185-191). New Delhi, India: New Age.
- Shanhong, T. (2000, August). *Knowledge management in Libraries in the 21st century*. Paper presented at the Sixty sixth IFLA General Conference. Retrieved from archive.ifla.org/IV/ifla66/papers/057-110e.htm.
- Thaker, U and Rawal, C. (2007). Five laws of library science In new perspective. *Dlibcom*, 2(8,9), 11-16.

READING HABIT OF POST GRADUATE STUDENTS OF SREE CHAITANYA COLLEGE, HABRA : A STUDY

MOUSUMI SATPATHI (GHOSHAL) AND DOLI SAHA (DAS)

Abstracts : One should read books and magazines to acquire knowledge and the habit of reading is an essential tool for lifelong learning. This paper focuses the reading habits i.e. frequency of reading materials, reading for pleasure, time spent for reading etc. The result of the study indicate that most of the students are interested in syllabus oriented reading and that the reading habits among the students are decreasing.

Key Words: Reading habits, Reading interest, Reading behavior

1 Introduction :

Education is the process of instructing the learner. It is to bring desirable changes into the behaviour of human beings through knowledge. Reading is the act of acquiring knowledge. Reading of books contributes towards the enrichment of our knowledge in terms of human experience, skill and information.

According to *Encyclopedia Americana*, 'Reading involves looking at graphic symbols and formulating the sounds and ideas they presents'.

According to *Oxford English Dictionary*, 'Habit means doing something having a habit or custom of so doing'.

Reading Habit means, 'of Pertaining to school activities inclusive of both regular academic course and extra-curricular activities'.

Understanding reading habit may help us to determine and identify the information needs and information seeking behavior of users.

2 Objective of the Study :

The primary goal of this study is to understand the reading interest and information use habit of postgraduate students. However for convenience, an attempt has been made here to comprehend the reading habit of postgraduate students through a study of such students of Sree Chaitanya College, Habra.

3 Methodology :

To achieve the objective of the study, a survey was done for collecting necessary information from the post-graduate students. Although a comprehensive study needs to cover the whole population, however for convenience a sample study was made for this purpose. The sample thus selected covered a total number of 100 Post-graduate students of which 50 students were chosen randomly from each of Bengali and Chemistry Departments. The tools and techniques for collecting data were a combination of both questionnaire and interview. Apart from the above, necessary data were collected from different documentary sources.

4 Analysis and Findings :

The collected data, in order to achieve the goal of the study, are analysed and presented below.

4.1 Reading of Books

Table-1 : Reading of Books

Reading books	Bengali	Chemistry	Total	Percentage (%)
Read	48	45	93	93
Not read	2	5	7	7
Total	50	50	100	100

Table-1 shows that 93% of PG students are Interested in reading books.

4.2 Preferences towards different types of Books

Table-2 : Preferences towards different types of Books

Nature of books	Bengali	Chemistry	Total %	Percentage (%)
Text books	22	25	47	50.6
Reference books	16	10	26	27.9
Others	6	10	16	17.2
Literature	4	0	4	4.3
Total	48	45	93	100

Table-2 shows that maximum students like to read text books (50.6%) followed by Reference books (27.9%), literature (4.3%). Remaining students like other materials (17.2%).

4.3 Motivation for seeking help for Reading Habit.

Table-3 : Presents how the books are chosen

Recommended	Bengali	Chemistry	Total	Percentage (%)
Teacher	15	18	33	35.49
Syllabus	20	17	37	39.79
Friends	3	5	8	8.60
Librarian	10	5	15	16.12
Total	48	45	93	100

It shows 35.49% of the books are recommended by the teachers, 39.79% of the books are chosen due to syllabus orientation, 8.60% of the books recommended by friends and 16.12% books are recommended by the librarian.

4.4 Attendance of the students in the college library.

Table-4 : Presents the attending the college library

Use of library	Bengali	Chemistry	Total	Percentage (%)
Attend college library	45	37	82	88.18
Do not attend college library	3	8	11	11.82
Total	48	45	93	100

It shows the majority of PG students (88.18%) attend the college library and other 11.82% are not interested in attending the college library.

4.5 Respondent visit to the College Library for Reading.

Table-5 : Presents the frequency of the use of library by the PG students

Frequency of use	Bengali	Chemistry	Total	Percentage (%)
Daily	29	20	49	52.69
Weekly	13	20	33	35.49
Monthly	5	3	8	8.60
Yearly	1	2	3	3.22
Total	48	45	93	100

It shows students using library daily (52.69%), weekly (35.49%), monthly (8.60%), and yearly (3.22%).

4.6 Availing of Reference Books

Table-6 : Presents collection of reference books

Opinion	Bengali	Chemistry	Total	Percentage(%)
Sufficient	15	10	25	26.89
Not sufficient	33	35	68	73.11
Total	48	45	93	100%

It interprets the opinion about the library collection. 26.89% of the students are satisfied but 73.11% of them are not satisfied. According to them the collection is not sufficient.

4.7 Personal opinion about the College Library for Reading.

Table-7 : Presents the atmosphere of library reading

Opinion	Bengali	Chemistry	Total	Percentage (%)
Very satisfactory	6	4	10	10.75
Satisfactory	30	31	61	65.60
Some what satisfactory	8	6	14	15.05
Dissatisfactory	4	4	8	8.60
Total	48	45	93	100%

It shows the reading atmosphere of the library. 10.75% say that it is very satisfactory, satisfactory (65.60%) some what satisfactory (15.05%) and 8.60% of the students is dissatisfied.

4.8 Awareness about the Library Services.

Table-8 : Presents the services offered by the library

Type of service	Bengali	Chemistry	Total	Percentage (%)
CAS	8	5	13	13.99
SDI	2	2	4	4.30
Photocopying service	0	0	0	0
Reference	38	38	76	81.72
Total	48	45	93	100

It shows that about 81.72% students get reference services, 13.99% of the students get CAS, and only 4.30% of the students get SDI. Photocopying services are not available in the library.

4.9 Availing of Library Services

Table-9 : Presents the opinion about the library service

Library Service	Bengali	Chemistry	Total	Percentage (%)
Satisfactory	38	33	71	76.34
Not satisfactory	10	12	22	23.66
Total	48	45	93	100

It show most of the students (76.34%) are satisfied with the library services but few of them (23.66%) are not satisfied.

4.10 The time of study

Table-10 : Presents the time of study

Time	Bengali	Chemistry	Total	Percentage (%)
Less than 30 mins	2	5	7	7.53
30 mins	10	13	23	24.73
1-2 hours	33	22	55	59.14
3-4 hours	3	5	8	8.60
Total	48	45	93	100

It shows about 8.60% students spend 3-4 hours while 59.14% spend 1-2hours. 24.73% of the students spend only 30 minutes in the library while 7.53% of them spend even less than 30minutes.

4.11 The difficulties Faced

Table-11 : Presents the difficulties faced

Difficulties	Bengali	Chemlstry	Total	Percentage (%)
Books not available	38	37	75	80.65
Not arranged properly	5	5	10	10.75
Library staff not co-operative	2	2	4	4.30
Library hour not suitable	3	1	4	4.30
Total	48	45	93	100

It represents the difficulties faced by the students while using the library. 80.65% students are not satisfied with the availability of books, 10.75% are not satisfied with the arrangement of books, 4.30% students are dissatisfied with the service of the library staffs and another 4.30% say that the library hour is not suitable for them.

4.12 The things of the library to be Improved

Table-12 : Presents the things of the library to be improved

Type	Bengali	Chemlstry	Total	Percentage (%)
Facilities to be improved	5	2	7	7.53
Text or reference books to be Increased	43	43	86	92.47
Total	48	45	93	100

It shows the improvement of library services. 92.47% of the students demand for increasing text and reference books and only 7.53% of the students says for improving library facilities.

4.13 The status of reading books

Table-13 : Presents the status of reading habits

Reading habits	Bengali	Chemlstry	Total	Percentage (%)
Declined	42	40	82	88.17
Not declined	6	5	11	11.93
Total	48	45	93	100

It reveals the present status of reading habits of the students. 88.17% students say that the reading habit has declined but remaining 11.93% are against their views.

4.14 The reason of declination

Table-14 : Presents the reason of declination

Reason	Bengall	Chemistry	Total	Percentage (%)
Lack of patience	10	7	17	18.28
Advent of television	7	5	12	12.90
Lack of interest	12	5	17	18.28
Availability on net	7	15	22	23.66
College assignment/ exam pattern	12	13	25	26.88
Total	48	45	93	100

It shows that 18.28% of the students opine that it is due to lack of patience, 12.90% holds the advent of television to be responsible for the present scenario. 18.28% say it is due to lack of interest and 23.66% of them opines that available on net and 26.88% it is the examination patters or the college assignments which have taken away their time of reading.

4.15 The ways of improving reading habits

Table-15 : Presents the ways of improving reading habits

Measures	Bengall	Chemistry	Total	Percentage (%)
Encouragement by family or friends	8	12	20	21.50
Launching book bazaar	5	9	14	15.05
Gift vouchers for books	7	9	16	17.20
Project reports in academic curriculum	28	15	43	46.24
Total	45	48	93	100

It shows the necessary steps to be taken for improvement of reading habits. 46.24% of the students says o prepare project reports, 21.50% says about encouragement by family and friends. 15.05% says about launching book bazar and 17.20% say about distributing gift vouchers for the purchase of books.

Summary of findings :

The analysis and interpretation of data have given some interesting results. The major findings of this survey are given below.

1. The investigation shows that most of the Post-graduate students are

interested in reading books and very few depend on other materials. Those who interested in reading depend on Library.

2. They depend mostly on text books and reference books, but a large majority of the respondents suggest that the text books and reference books are inadequate.
3. It is found that most of the students choose their book according to syllabus and or by recommendation by teachers. Few of them depend on librarians also.
4. It is found that majority of the students came to the library daily and atmosphere of the library is very helpful to them.
5. In their opinion the library service is very satisfactory, but some facilities like CAS, SDI, and Photocopying are not at all good.
6. They give a great question mark about collection of books for Post-graduate students, because they do not get books according to their demands.
7. In their opinion, the reading habits is decreasing now for lack of interest and easily available on Internet. They also have stated that the project reports in academic curriculum may have increased the reading habit.

Conclusion :

Reading is a tool in the hands of a person by which he/she can increase his/her knowledge to obtain new ideas. It is a passion, a hobby and also a habit. A good reading habit can become an addiction which enhances ones' knowledge, vocabulary, concentration, IQ, analytical skill and once one master this skill one will never complain about loneliness. This study shows that reading habits of post-graduate student in relation to books and the findings have clear Implications for the library. It also shows that reading gets a serious attention among the Post-graduate students. The college library focuses attention to academic programmes. The library may be well advised to open academic and related reading materials (i.e. reference books) and also become professional on the job of serving the students with experience and some specialization. In this context of enhancing the use of the library, huge number of books and reference books should be collected.

Some Suggestions :

Reading habit plays a very crucial role in enabling a person to achieve efficiency in life. Through constant reading everybody acquires knowledge. So the collection, organization and dissemination of resources of a college library must be tailored to the actual needs of the institution as a whole and to the students in particular. For this different steps should be attempted:

User Orientation Programmed for the new comers

List of new arrival books should be display on notice board.

Introducing Photocopying services, OPAC and Advisory services etc.

If it is established in a library then reading habit helps the students to

improve vocabulary, achieve better comprehension and all round development of the individual.

References :

1. Choudhury, B.K and Pandhy, B.K (1988). Reading habits of undergraduate students in college of Rourkela: a survey. ILA Bulletin, 44(5), p. 123-130.
2. Mukherjee, A.K. (1962). How to make pupils library minded. Education forum Vol. 7.
3. Oxford English Dictionary. 2nd ed. Vol. 6. Oxford: Clarendon Press, 1989. P. 994.
4. Sharma, Shobha. "Reading Habits and Readers Interest". Delhi: Shree Publishing House, 1988.
5. The Encyclopedia Americana. International led. Newyork: Encyclopedla Americana Corporation, 1972. P. 248.

ACCREDITATION OF LIS EDUCATION IN INDIA: FORMATION OF PARAMETERS IN THE LIGHT OF RECOMMENDATIONS MADE BY COMMISSIONS AND COMMITTEES

ASHIS BISWAS

Abstract : Mushrooming growth of LIS (Library and Information Science) schools in India without maintaining minimum standards required for conducting the LIS programmes and the different course structures in Indian LIS schools creating problems to assess the academic qualification of candidates. At this juncture it is the urgent need of an accreditation agency to maintain the standard of LIS education and stopping the mushrooming growth of LIS programmes. The most vital part of accreditation agency is to set the parameters for accreditation the LIS programmes. Regarding the several problems of LIS programmes in India it may be difficult as well as controversial to set the proper parameters for accreditation. At this point the recommendations of the commissions and committees on LIS education in India can help to reduce the controversy and set the parameters for LIS programmes. This paper discusses the parameters, based on the recommendations of the commissions and committees on LIS education in India, for accrediting the LIS programmes in India through an accreditation agency. Accreditation of LIS programme will thus give public recognition assuring the required standards in terms of objectives, level and structure of courses, curriculum, course delivery, faculty and infrastructure. Maintenance of certain standards will make the LIS programmes throughout India qualified ones.

Keywords : Accreditation Agency, Commissions and Committees, Course Curriculum, LIS Programmes, Parameters, Recommendations.

Introduction

Mushrooming growth of LIS schools in India without giving much care to the standards is adding salt to the already existing wound regarding the unique pattern of LIS programmes. Moreover there are lot of differences in existing programmes in all respect. Due to this sometimes the various agencies aspiring to appoint librarians of various grades face problem to assess the academic qualification of candidates or what should be the actual structure of qualification for example masters degree of 1 year and masters degree of 2 years would be given the same weightage or students coming out from 5 year integrated course and students coming out from of 2 years integrated course are equally competent to handle the several techniques including ICT.

The other problems of LIS Education in India are

1. Varying elements of course contents making inconsistent syllabi,
2. Diverse course structure in different LIS schools,
3. Inadequate student-teacher ratio,
4. Lack of consistency in
 - Admission procedure and selection criteria,
 - Course delivery : teaching methods, tools and evaluation,
 - Training of Teachers including continuing education,

- Research programmes
- 5. Inadequate infrastructure in respect of
 - Status of LIS Departments
 - Affiliation of Departments
 - Faculty members
 - Incentives for students
 - Rooms: class, seminar, staff, office etc
 - Library
 - Computer laboratory
 - Equipment

LIS education through distance education programmes is another cause of the concern. More and more universities are joining the race of providing distance education day by day to raise funds. In addition to the lack of adequate infrastructural facilities, majority of the universities offering distance education do not have regular faculty. (T. Kaur)

At present the problem surmounting leaps and bounds. Lot of conferences and seminars providing several recommendations as well as resolutions but no concrete step has been taken so far. The role of library associations and IATLIS are also very unfortunate in this matter.

It has now become imperative to establish an external agency at the national level which can undertake the work of accreditation of LIS courses in India, as is being done in certain other professions like Medicine, management, Engineering and Technology, Law and Education. A more difficult question to answer refers to the authority, which should be responsible for accreditation. The UGC or Association of Indian Universities (AIU) can take the lead in developing a mechanism for introducing a method of accreditation of LIS schools and courses. The Government of India should pass an Act that should make provision for establishing a statutory Library and Information Science Council of India (LISCI) and it should function as a central agency to provide guidelines and standards in LIS education and practices. LISCI would be responsible to lay down parameters for starting new LIS schools, continuation of existing LIS schools, recognition and equivalence of different levels of LIS degree for the purpose of employment or higher studies, and promotion of LIS education in India. (Sarkhel)

The UGC established National Assessment and Accreditation Council (NAAC), an autonomous body to assess and accredit the higher education institutions including universities, colleges and departments/schools/centre of the universities. It has assessed and accredited a large number of universities and colleges throughout the country. In the present system of NAAC, there are two types of accreditation: institutional accreditation and departmental accreditation. Accordingly, any individual academic department of the university can be assessed and accredited by the NAAC. The departments of LIS can also be assessed by NAAC.

Though, India boasts of having largest number of LIS schools in South Asia region, no serious attention has been paid to set up an accreditation system for evaluation so far. CONPOLIS recommended for an accreditation agency to ensure the standard and the quality of the (LIS) training imparted. CDC, 1991 recommended for an urgent action and all national bodies must work and come together for formation of an accreditation agency. Library associations have also been sincere efforts for the accreditation of professional education by discussing the theme in conferences and seminars. The UGC sponsored national seminar on accreditation of LIS schools in India, held at Nagpur University in 1994 concluded with a need to establish national council for accreditation under name "India Council for Accreditation of Library and Information Science education (ICALISE)". But till date these plans exist on paper only.

Now it should be cleared that why we should prefer ICALISE rather than NAAC because of the following reasons, viz, better scope for leadership; opportunity to play its role actively like that of Indian medical Council, Bar Council of India and All India Council for Technical Education; support from majority of the libraries, library schools and LIS professionals who are interested to create ICALISE on the analogy of other accrediting agencies of professional courses; autonomy, certifying the required standard only for LIS departments and their products; making it compulsory for all kinds of LIS schools to be accredited to maintain the required standards to run the LIS programmes; minute observation of the visiting team of ICALISE of infrastructure, teaching staff, teaching method and tools, course structure and content, admission criteria and various academic activities of LIS departments instead of just observing the self assessment; establishing grading/ranking system only for LIS department; accreditation process by ICALISE for LIS department is not dependent on institutional policy but the NAAC's activities is dependent on institutional policy; the representatives of ICALISE will be comprised mainly of erudite LIS professionals who will better understand the required standards of LIS schools for accreditation.

At this juncture it is the urgent need of an accreditation agency to maintain the standard of LIS education and stopping the mushrooming growth of LIS programmes. The most vital part of accreditation agency to set the parameters for accreditation the LIS programmes. Regarding the several problems of LIS programmes in India it may be difficult as well as controversial to set the proper parameters for accreditation. At this point the recommendations of the commissions and committees on LIS education in India can help to reduce the controversy and set the parameters for LIS programmes.

Parameters

Mission, Goals and Objectives

Advisory Committee for Libraries (ACL) mentioned the following objectives for LIS education:

The objective of the basic year's course (Diploma/equivalent qualification) should be:

1. To provide comprehensive training in general librarianship and to prepare the students for advanced work in librarianship in the second year.
2. To emphasise the teaching of the basic principles underlying techniques and skills of librarianship, in addition to description of routine practices, etc.
3. To acquaint the students with the social, educational and communicational role of the library in modern society.
4. To give the students adequate bibliographical control of literature, at least on one department of knowledge with particular reference to Indian materials.

It is necessary to make an attempt to define the objectives of the advanced course leading to a master's degree in library science as early as possible. These objectives should be:

1. To train students for administrative posts in one of the major types of libraries—large public library system, university libraries, special libraries, by offering them opportunity for intensive study of objectives, principles and special problems of organisation and administration.
2. To offer the specialisation to students in the different fields of librarianship.
3. To train persons in methods of research.
4. To provide teachers of library science for the universities.

Ranganathan Committee (RC) on LIS Education (1965) stated that the department of Library Science has the following three-fold functions:

1. To train professional librarians
2. To prepare the holders of B.Lib.Sc. degree for the additional course leading to the degree of M.Lib.Sc. and
3. To engage in research and to train the professionally qualified staff to do research.

Thus objective of a LIS Department conducting atleast BLIS and MLIS programmes should be:

- to impart knowledge and training in librarianship emphasising its necessity in the building of nation
- to engage and train professionally qualified persons to do research in LIS

Level and Structure of Courses

ACL recommended that diploma course should be followed up by an advanced course of training in Library Science. Further, librarianship like other professions needs to be supported by research and investigation.

Library Committee (LC) recommended that semi-professionals courses like certificate in library science should ordinarily be taken by non-university agencies. There should be two degrees in library science also. They may be called respectively Bachelor of library Science (B Lib Sc) and Master of Library

Science (M Lib Sc). The Departments of Library Science should also engage themselves in research in library science.

RC recommended that Department of Library Science in universities should focus on bachelor, master and research works in library science and certificate course should be conducted by library associations. The committee also suggested for equivalence of diploma and bachelor's degree course in library science. The committee further suggested **pre-admission course** for raw graduates who wants to take admission in library science course.

Curriculum Development Committee (CDC), 1991 suggested six courses in LIS in which BLIS course was suggested to conduct in selected colleges.

CDC, 2001 emphasised on two year integrated MLISc course. The committee further suggested that in addition to the integrated course, the Universities may also consider to start different levels of courses in Library and Information Science.

Studying the recommendations on level and course structure we can decide the parameter as that the certificate (six month duration) and diploma (10 months duration) courses should be conducted by library associations and BLIS, MLIS, M.Phil and doctoral programmes in LIS should be conducted only by universities. Regarding the multidisciplinary nature of LIS discipline and inclusion of IT to survive in the present age the one year BLIS and one year MLIS programme or 2-year integrated MLIS programme is not sufficient to properly equip a LIS professional. Determining the duration of LIS programmes is the most controversial part. Considering the several pros and cons of 1 year BLIS, 1/2 year/s MLIS, 2/5 years integrated MLIS programmes the duration of the LIS programmes should in the following way:

BLIS	1 year 3 months + 3 months (Internship)
MLIS	1 year 3 months + 3 months (Project work)
M.Phil	As per the UGC guideline
Ph.D.	As per the UGC guideline

Needless to say, the course duration suggested herewith needs a perspicacious discussion by erudite LIS professionals considering all the pros and cons to survive the LIS programme in the present age with full dignity as a discipline. One thing is very clear that total two years course duration for BLIS and MLIS or 2 year integrated MLIS is not enough to fully equip a LIS student to match with the job responsibilities at present age. The process seems to be rigmarole but it is certainly not that because it only needs to bring the erudite LIS professional to sit in one place to discuss.

Curriculum

ACL suggested that classification and cataloguing need less emphasis than they receive now (at the end of 1950s). Regarding those two subjects one system for each should be given emphasis while giving the structure, functions and limitations of other.

Library and administration should be planned as one subject with two distinct areas within it.

Bibliography, book selection and reference service should be given importance. Bibliography should form a separate course and book selection and reference should constitute as one course.

RC recommended the following papers:

B Lib Sc: (i) Library Organisation

(ii) Library administration

(iii) Physical Bibliography and Book selection

(iv) Document Bibliography and Reference Service

(v) Library Classification (Theory)

(vi) Library Classification (Practice)

(vii) Library Catalogue (Theory)

(viii) Library Catalogue (Practice)

(ix) Record of Practical work

M Lib Sc: (i) Universe of Knowledge. Its development and structure

(ii) Depth Classification (theory)

(iii) Depth Classification (practice)

(iv) Advanced Library Catalogue

(v) Any of the following:

(a) Public Library System

(b) Academic Library system

(c) Research and Technical Library System

(d) Documentation

(vi) Project during term time

(vii) Literature survey (seven fields mentioned here).

CDC, 1991 recommended six papers as core and sixteen papers as electives. Students are expected to take two electives of 50 marks each. Thus, the BLISc course will cover a total of 700 marks.

Recommended five core papers and six elective papers from which students are expected to select two elective papers of 100 marks each. Thus, it appears that the MLISc course of one year programme covers a total of 700 marks.

For MLISc course (two year integrated programme) total of nine papers have been suggested as core papers in which five papers (paper I to V) to be taught in the 1st year and four papers (papers VI to IX) in the 2nd year. The CDC has suggested to take the syllabus of paper III of 1st year and VI and VII of 2nd year from the MLISc course module (one year course).

CDC, 2001 recommended for two year integrated MLISc course with fourteen core papers and one elective paper.

- MLISc (Integrated):
- (i) Foundation of Library and Information Science
 - (ii) Knowledge Organisation, Information Processing and Retrieval (Theory)
 - (iii) Knowledge Organisation, Information Processing and Retrieval (Practice)
 - (iv) Information Technology Part 1: Theory & Part 2: Practice]
 - (v) Management of Library and Information Centres/ Institutions
 - (vi) Information Sources and Services (Theory)
 - (vii) Information Sources and Services (Practice)
 - (viii) Library and Users [Part 1: Theory & Part 2: Practice]
 - (ix) Information and Communication
 - (x) Information analysis, Repackaging and Consolidation
 - (xi) Information Retrieval [Part 1: Theory & Part 2: Practice]
 - (xii) Research Methods and Statistical Techniques
 - (xiii) Information Technology: Applications
 - (xiv) Information Technology: Applications (Practice)
 - (xv) Elective Papers: Information system
 - a. Business Information Systems
 - b. Environmental Information Systems
 - c. Biotechnology Information Systems
 - d. Health Science Information Systems
 - e. Archival Museums and Archaeological Information Systems
 - f. Legal Information Systems
 - g. Agricultural Information Systems
 - h. Social Sciences Information Systems
 - i. Industrial Information Systems
 - j. Rural and Community Information Systems

The papers henceforth suggested here to suit the suggested course duration both for BLIS and MLIS have been based on the recommended papers by committees with a little customisation and rearrangement.

BLIS

Library and Information Society	100 marks
Library Management	100 marks
Classification (Theory)	100 marks
Classification (Practice)	100 marks
Cataloguing (Theory)	100 marks

Cataloguing (Practice)	100 marks
Reference Sources and Services	100 marks
ICT and its Application in Library (Theory)	100 marks
ICT and its Application in Library (Practice)	100 marks
Bibliography and Collection Development	50 marks
Preservation and Conservation of Library Materials	50 marks
Internship	

MLIS

Information and Communication Process	100 marks (theory:80+project: 20)
Information Storage and Retrieval	100 marks (80+20)
Management of Information Systems and Centres	100 marks (80+20)
Technical Writing, Information Analysis, Repackaging and Consolidation	100 marks (80+20)
Research Methodology	100 marks (80+20)
ICT Application: Advanced (Theory)	100 marks (80+20)
ICT Application: Advanced (Practice)	100 marks
Preservation and Conservation of Digital Library	50 marks (40+10)
LIS Education, Comparative and International Librarianship	50 marks (40+10)
Special/Elective papers : (Any One)	100 marks (80+20)

Course Delivery: Teaching Methods, Tools and Evaluation

ACL expressed concern on dependence on lecture notes and wide or deep reading is neglected. Practice work is chiefly confined to classification and cataloguing.

LC suggested that emphasis should be on the methodology of deducing practices and view-points from fundamental laws. Tutorial discussion should be the oft-used method. Lectures should be few and intended to inspire and take the students to higher levels of thinking and to open up new vistas for pursuit.

RC suggested that formal lessons should not all be in the form of lectures, putting the students in the passive mood of listening or taking notes. Most of the lessons should involve a two-way flow of thought between the teacher and the taught.

CDC, 1991 suggested that apart from black-board, new teaching aids like OHP, slide projectors, AV equipment, PCs, CD-ROM, etc, have been suggested to be used to make the teaching-learning process more effective.

CDC, 2001 suggested that modern technological advances should be included to make the classroom teaching more innovative.

Henceforth the course delivery should not only be based on lecture method. Most of the lessons should involve a two-way flow of thought between the teacher and the taught with the help of modern technological advances to make the classroom teaching more innovative. In case of practical papers students should be given more opportunities for hands on practice.

Faculty

ACL recommended that teachers for library classes should be selected on the strength of their research, publication and experience. All universities teaching library science should appoint Boards of Studies and Boards of Examiners in Library Science.

LC suggested Doctorate degree for Professor, M Lib Sc as the minimum qualification for Reader along with some research experience to his/her credit and B Lib Sc as the minimum qualification for Lecturer but proposed this qualification should be raised to M Lib Sc.

A first grade department of library science in a university should have a minimum full-timed staff of one Professor, one Reader, two Lecturers, and two Demonstrators in Library Science.

The ratio of full-timed teachers (other than demonstrators) to students should not exceed 1 to 10 in the B lib Sc course and 1 to 5 in the M Lib Sc course.

RC recommended 1:10 staff-student ratio at the B Lib Sc and of 1:5 at the M Lib Sc level. Minimum 1 Reader, 2 Lecturers for B Lib Sc course and minimum 1 Professor, 2 Readers and 4 Lecturers for M Lib Sc course recommended. The committee also suggested for regular training for teachers of library science departments to grasp the constantly expanding domain of library science education.

CDC, 1991 suggested 1:5 teacher-student ratio. The committee also suggested to invite (in case of non-availability of teachers) external experts for delivering lectures and demonstrations in the area like computer applications, informetrics, AV technologies etc. It opined that information professionals can be employed as part time guest teachers for bringing current practical experience into the class room and thus establishing link between theory and practice. It also suggested to organize the different types of short-term courses of longer duration in and outside the country.

CDC, 2001 emphasised to provide necessary education and training for teachers to teach IT.

National Knowledge Commission (NKC) recommended staffing (teacher) pattern for LIS department as such: BLISc-1 Professor, 2 Reader, 2 Lecturers; MLISc-1 Professor, 2 Reader, 4 Lecturers. There should be a 1:10 teacher student ratio. The commission also recommended that teachers who will teach in areas such as ICT applications in libraries and other modern methods, should have a specialization in these areas.

Thus the LIS department conducting both BLIS and MLIS programme

should have minimum 1 Professor, 2 Associate professors and 4 Assistant Professors.

Qualification of the LIS faculty should follow the required guideline of UGC.

There should be 1:10 teacher student ration in BLIS and 1:5 teachers student ratio in MLIS.

The LIS department should arrange Continuing Education Programme CEP) for teachers atleast once in two years.

Students

Intake capacity in a LIS department should be BLIS: 50 and MLIS: 15

Infrastructure and Facilities

RC recommended the following requirements: 2 lecture rooms, 1 practical or laboratory room, 1 reading room, staff room for individual teachers, 1 seminar room, 1 room for demonstration and use of library equipment, 1 office room.

CDC, 1991 suggested for Departmental Library and workshop cum information processing laboratory.

NKC recommended that all departments of LIS should set up computer laboratories and well-equipped departmental libraries with appropriate teaching tools along with appropriate physical facilities such as classrooms.

Taking into consideration of the above mentioned recommendations, the parameters for infrastructure and facilities can be set in the following way:

- The Department should have a separate identity and it should not be associated and controlled by the university library.
- It would be better if the department is housed in a separate building
- Availability of rooms in Departments should be like this:

Rooms	Number of Rooms
Lecture room	2
Computer Laboratory	1
Reading room	1
Seminar room	1
Room for demonstration and use of library equipment/Departmental Library	1
Staff room	***
Office room	1
Room for Research Scholar/ Project room	1

***It would be better if the separate room is arranged for individual teachers. Otherwise one separate room for Head of the department, one room for Professors and Associate Professors and one room for Assistant Professors should be arranged.

- Equipment

The department should have some modern equipment to facilitate the teaching-learning process and office works like laptop, LCD projector, TVCR, scanner, printer, photocopy machine, fax machine etc.

- Computer Laboratory

The computer laboratory of LIS department should have minimum 50 machines of latest models and one server. All the machines should be configured with latest Windows/XP/Linux version (original) available in market along with the peripherals like gist card, multimedia, OCR, printer, internet with high bandwidth. Provision of atleast one proprietor software (e.g., SOUL/LIBSYS) and standard open source integrated library management softwares must be kept in the laboratory for giving in hand practice to students.

- Tools for Teaching

Tool	Ratio <Tools: Student>
Classification Scheme	1 : 1
Cataloguing Code	1 : 1
Subject Headings List	1 : 2
Thesaurus	1 : 3/4

Conclusion

Setting up an accreditation agency separately for LIS education in India will help immensely to solve the quagmire the LIS education bogged down in. Deciding the parameters for accrediting the LIS programmes is the most vital issue. The parameters if they are set based on the recommendations of commissions and committees it will not only reduce the controversies and help to come to an agreement but it will also help to see that the recommendations get implemented essentially in the absence of any clear instruction from UGC to implement the recommendations. Henceforth to set up an accreditation agency various organisations, viz, central Government, State Government, UGC, AIU, LIS professional associations and university administration should join their hands to lay down the specifications relating to accreditation of LIS programmes. Among them UGC and IATLIS should take the leading role. Accreditation of LIS programme will thus give public recognition assuring the required standards in terms of objectives, curriculum, faculty and infrastructure. Maintenance of certain standards will make the LIS programmes throughout India qualified ones. Thus Professor Juran Krishna Sarkhel rightly pointed out that "accreditation of LIS education will facilitate the process of achieving greater transparency and transferability of professional qualifications from one LIS programme to another and thus increasing employability of the students upon completion of their degrees".

References

1. Enser, P. (2002). The role of professionals body: accreditation in library and information science education in the UK. *Libri*, 52, 214-219.

2. Haridasan, S. (2003). LIS education: accreditation and its prospects. *ILA Bulletin*, 39(1), 8-10
3. Sarkhel, J.K. (2006). Quality assurance and accreditation of LIS education in Indian universities: issues and perspectives. In C. Khoo, D. Singh & A.S. Chaudhury (Eds.), *Proceedings of the Asia-Pacific Conference on Library and Information Education & Practice 2006 (A-LIEP), Singapore, 3-6 April 2006* (pp.427-431). Singapore: School of Communication & Information, Narayan Technology University.
4. Satyanarayana, N.R. (2009). Accreditation: panacea for producing better professionals.
5. Ministry of Education, Government of India. (1957). Report of Advisory Committee for Libraries. New Delhi.
6. UGC. (1965). Report of the Library Committee of the University Grants Commission. New Delhi.
7. UGC. (1965). Report of University Grants Commission Review Committee: Library Science in Indian Universities. New Delhi.
8. UGC. (1993). Report of the Curriculum Development Committee in Library and Information Science. New Delhi.
9. UGC. (2001). Report of the Curriculum Development Committee in Library and Information Science. New Delhi.

A STUDY ON COPYRIGHT ISSUES ON THE INSTITUTIONS OF HIGHER LEARNING AND RESEARCH IN KOLKATA

ANWESHA CHATTERJEE, NILOFER NISHAT AND KAUSTAV DUTTA

Abstract : We are living in the information society where we became more dependent towards the digital and electronic of Information. The digitization or conversion of digital document is quite common and obvious for meeting the needs of the users in the present scenario. The present paper is a study of the Intellectual property and related issues in eight different types of libraries in Kolkata. The paper highlights a detailed view of the library profile and the mode of services in these libraries. The IPR issues especially copyright areas related to these digital libraries in Kolkata are also discussed briefly. This study revealed that the current state of the digitization and availability of these digital documents in the libraries in Kolkata. The study reflects the major problems that are being faced by the professionals in order to protect the Intellectual Property Rights (IPRs) including copyright in the digital library environment. Lastly conclusion has been drawn based on the findings of the IPR issues. Some suggestions are given to meet the challenges of IPR issues in the library and information centers.

Keywords : Intellectual Property (IP), Intellectual Property Right (IPR), Copyright, Digital Libraries, Digitization.

Introduction:

We are living in the information society where the digital revolution has brought drastic changes to information storage, access and retrieving process. This revolution has influenced our life patterns in terms of information gathering and consumption habits. It is the digital library which acts as the gateway of knowledge and information to the common people. Digital libraries help users by providing information services, irrespective of time and place. In recent times, people are overwhelmed by the information explosion. In this situation users prefer electronic media as these help in providing easy and quicker access to the relevant information. In this context, there are various kinds of intellectual property schemes available to protect the intellect of the creator in the digital library environment. While the copyright model is still being utilized for all manners of text in digital form, the behaviors of the authors and readers are being changed by the new digital technologies.

The word 'Intellectual Property Right' is the combination of three terms Intellectual, Property and Right. The word Intellect originates from the Latin word 'Intellectus'. Man has the capacity to acquire knowledge and increase it by gathering more and utilizing it as and when required, throughout his lifetime. A person makes his living meaningful by selling the product of his Intellect which forms a special kind of property known as intellectual property¹. Intellectual Property Rights¹ are the exclusive rights given to the creator over the use of his or her creation for a certain time and thus protect the owner against unauthorized copying.

The application of information and communication technology influenced the

dissemination of information. The advent of digital technology satisfies the users' need of timely information with speed and accuracy. According to N. M. Malwad and M. Anjanappa² following are the major issues of IPR in digital context in Indian libraries:

- Is digitization to be considered as similar to reproduction, for example using Xerox machine?
- Is digitization a deductive activity such as translation from one language to another?
- Can transmission of digitized documents through Internet be considered as commercial distribution or public communication similar to broadcasting?
- Is the principle of exhaustion of the distribution right still effective in the digital age?
- Can we consider a database as a special collected work that should be protected by the copyright law or it can be considered as a special work requiring specific legislation for its protection?
- What can be considered as "Fair use" in the Internet environment?
- What are the concerns of the library community?
- In the digital context if access could be technologically restricted by the copyright owner, how could the public exercise fair use with regard to those works?
- Whether libraries should be prevented from employing digital technology to preserve work by making three copies—an archival copy, a master copy and a use copy?
- Whether Internet Service Providers (including libraries and educational institutions) should be liable for copyright infringement merely because they facilitated the transmission of digital data (Zeroes and Ones) that translated into another party's copyrighted work.

Objectives:

The objectives of this study are :

- A. To find out the general overview of the institution of higher learning.
- B. To depict a picture of digitization in libraries of Kolkata.
- C. To identify the rare and important documents in digital form in these libraries.
- D. To find out the existence of copyrights in these libraries.
- E. To identify the issues in these libraries and to suggest effective measures in this regard.

Literature Review: Following literatures were surveyed in the due course of study:

Rao³ analyzed the evaluation of traditional intellectual property rights and associated concepts from printed to digital works and how the characteristics of digital replication pose problems for traditional IPR systems. This article also

discussed about the scope of Indian copyright law, the rights of owner, infringement, penalties etc.

Clausen⁴ presented a new situation regarding intellectual property, particularly in connection with the Internet. The article revealed that Information professionals find themselves in the battlefield between copyright holders and users.

Shalini Urs⁵ presented the historical context of copyright legislation, copyright written scholarly communication process and the role of libraries in providing access to copyright materials in the digital age. This article suggested that the balance of "rights" and "exceptions" that has been maintained for 300 years needs to be considered for scholarly communications such as theses and dissertations as well as articles in electronic journals.

Zhou⁶ discussed about the inevitable trend for digital library development, digital information resources in multiple media and diversified information services using digital and network technologies.

Nicholas⁷ stated that it is impossible to estimate the degree of risk involved in offering digital library services, in such a way as to manage this risk in a practical and responsible manner.

Zhang⁸ found that for the electronic resources the number of copies, the term of usage, quantity of information, copyright and the contract with authors should be considered; for technologies used in the digital library, the evaluation should cover the novelty, inventiveness, usefulness and the access mode.

Abdulla⁹ presented the importance of copyright limitations and exceptions pertaining to educational institutions and libraries. The author advocated for applying copyright to the advantage of academic and research communities and offered strategies strengthening the right of use in favor of these communities.

Mahesh and Mittal¹⁰ identified a third type of digital content, gained digital besides the two known types, namely "born digital" and "turned digital". This study revealed that existing copyright laws, particularly in India, allow scope for forming opinions with regard to digital context thereby giving room for insecurity for digital content creators.

Importance: This study shows the current state of the digitization and availability of these digital documents in the libraries in Kolkata. The study reflects the major problems that are being faced by the professionals in order to protect the Intellectual Property Rights (IPRs) including copyright in the digital library environment.

Scope and Coverage: The study initially covered eight institutes situated in Kolkata. These are:

- A. Indian Institute of Management Calcutta (IIMC)—Joka, Diamond Harbor Road, Kolkata-700104.
- B. Indian Institute of Social Welfare and Business Management (IISWBM)—College Square (West), Kolkata-700032.

- C. Indian Institute of Chemical Biology (IICB)—4, Raja S.C. Mullick Road, Kolkata-700032.
- D. Central Glass and Ceramic Research Institute (CGCRI)—196, Raja S.C. Mullick Road, Kolkata-700032.
- E. Jadavpur University (JU)—118, Raja S.C. Mullick Road, Kolkata-700032.
- F. Bose Institute—P-1/12 CIT Scheme-VII-MV, Kankurgachhi, Kolkata-700054.
- G. S.N. Bose National Centre for Basic Sciences—Block-JD, Sector-III, Salt Lake. Kolkata-700098.
- H. University of Calcutta—87/1 College Street, Kolkata-700073.

Among the above eight institutes chosen the responses were received from five libraries of the concerned institutes in due time. So this study covered only five institutes. As the institutes of higher learning and research were covered in this study, of the five institutions two are concerned with research purpose and these libraries of the two institutions are dealing with special types of users. Only the persons concerned with their specific researches are the members of these libraries. Two libraries are the part of management institutions of higher learning. In these institutes the members of libraries are confined with particular disciplines specially and related areas are touched comparatively smaller. The single one university chosen here is of unitary in nature. The main aim of the university is to provide mainly one branch of knowledge i.e. engineering courses specially and for maintaining the university norms other areas of knowledge are imparted here. So the nature of the intellectual property of the particular branch of knowledge of the individual institutions concerned and the issues relating to problems of IPR of digital contents in these libraries have been discussed here, after being surveyed from the July to the middle of August, 2012.

Methodology: To get the information for the study a questionnaire was designed. Interview was taken from the respective librarian on the basis of the open questionnaire. The observation method was also taken into consideration. Analysis has been done based on the table

Analysis of data:

Table-1 : Distribution of Printed Documents in the Libraries

Institutional Libraries	Number of Books	Number of Journals	Number of Back Volumes of Journals
IIMC Library	1,35,000	500 (app.)	46,000
IISWBM Library	51,921	170	5,500
J.U. Central Library	6,00,000	4102	—
IICB Library	15,000	77	35,000
CGCRI Library	46,309	94	—

The above table shows that the library of IIMC has 1, 35,000 books, 500 journals and 46,000 back up volumes of journals in its collection. On the other hand In the library of IISWBM the number of books is 51,921, number of journals is 170 and 5,500 back volumes of journals. The library of JU has 6,00,000 books, 4,102 journals. The library of IICB contains 15,000 books, 77,000 journals, 35,000 back volumes of journals and CGCRI library has 46,309 books, 94 journals. It is revealed from the study that Jadavpur University library has maximum collection in terms of books and journals.

Table-2 : Distribution of Non-printed Document In the Libraries

Institutional Libraries	E-Books	E-Journal	E-Thesis	Other Types of Documents
IIMC Library	250	5,000 (Database)	—	CD-ROM = 3000 DVDs = 5000
IISWBM Library	1,010	6000	—	CD-ROM = 1100
J.U. Central Library	3,593	6200	5768	CD-ROM = 1655 Database = 20
IICB Library	—	126	137	—
CGCRI Library	—	4200	—	Database = 5

From the above table, it is clear that the library of the Indian Institute of Management, Calcutta has 250 nos. of e-books, 5,000 nos. of e-journal titles in its database; 3,000 nos. of CD-ROMs; 5,000 nos. of DVDs in its collection. On the other hand, the library of IISWBM has 1,010 nos. of e-books, 6,000 nos. of e-journals, and 1100 nos. of CD-ROMs. The Jadavpur University Central Library has 3,593 nos. of e-books, 6,200 nos. of e-journals, and 5,768 nos. of e-thesis, 1655 nos. of CD-ROM, 20 nos. of Database. IICB, Calcutta has 126 nos. of e-journals, 137 nos. of e-thesis and CGCRI has 4,200 nos. of e-journals, 5 nos. of Database. It is found from the study that Jadavpur University library has maximum number of non-printed documents but IIMC Library outnumbers JU Library in terms of possession of CDs and DVDs.

Table-3 : Distribution of Users and Staff In the Libraries

Institutional Libraries	No. of Users	No. of Staff	
		Professional	Non-professional
IIMC Library	1,000 (approx.)	14	10
IISWBM Library	1,500(approx.)	5	5
J.U. Central Library	10,486(approx.)	3	—
IICB Library	440(approx.)	3	5
CGCRI Library	550(approx)	—	—

After availing the above table, it can be said that 1000 nos. of users use IIMC library, with the help of 14 professional and 10 non-professional staff. IISWBM library has 1,500 nos. of users, 5 professional and 5 non-professional staff. Jadavpur University library has 10,486 nos. of users. It is found that this library has highest no. of users, with 3 professional staff. IICB library contains 3 professional and 5 non-professional staff and 440 (approx) no. of users. CGCRI library has 550 users.(approx) with 6 professional & 3 non-professional staff.

Table-4. Distribution of Services Rendered by the Libraries

Types of Services	IIMC Library	IISWBM Library	J.U. Central Library	CGCRI Library	IICB Library
Circulation of documents	Yes	yes	Yes	Yes	Yes
Photocopying services	Yes	yes	Yes	Yes	Yes
CAS	Yes	yes	Yes	Yes	Yes
SDI	Yes	yes	Yes	Yes	Yes
Print out facility	Yes	yes	Yes	Yes	Yes
Internet facility	Yes	yes	Yes	Yes	Yes
Literature search	No	no	No	Yes	Yes
Resource sharing	Yes	yes	Yes	Yes	Yes
Library loan	Yes	yes	Yes	Yes	Yes
Indexing & abstracting	Yes	yes	Yes	No	No
Instruction for using the library	Yes	yes	Yes	Yes	Yes

From the above table, it can be said that the library of Indian Institute of Management, Calcutta provide all the services to its users. These services are as follows:- circulation of documents, photocopying services, current awareness services (CAS), selective dissemination of information (SDI), print out facility, internet services, resource sharing, library loan, indexing & abstracting services, and instruction for using the library services. On the other hand the library of IISWBM provides all the above services. The central library of Jadavpur University also renders all these above services. Above three Institutional libraries do not have the literature search service. The library of IICB has the following services—circulation of documents, photocopying services, current awareness services (CAS), selective dissemination of information (SDI), print out facility, internet services, literature search, resource sharing, library loan

and instruction for using the library services. CGCRI library also provide these services. These two mentioned library do not have the Indexing & abstracting services.

Table-5. Distribution of the Types of Users In these Libraries.

Libraries	Types of Users
IIMC Library	General students, research scholars, faculty members etc.
IISWBM Library	Students (PG), research scholars, faculty members etc.
J.U. Central Library	Students (PG & UG), research scholars, faculty members etc.
IICB Library	Research scholars, faculty members etc.
CGCRI Library	Research scholars, faculty members etc.

This above table shows, the library of IIMC has the types of users like General students, research scholars, faculty members etc. On the other hand, Students (PG), research scholars, faculty members get the library facilities of IISWBM library. The J.U. central library has the following types of users— Students (PG & UG), research scholars, faculty members etc. In the IICB library & CGCRI library only Research scholars, faculty members can access the library facilities.

Table-6 : Software Used In these Libraries

Institutional Libraries	Software Used In these Libraries
IIMC Library	LIBSYS-4
IISWBM Library	Fully computerized library with the software designed by the Institute of its own.
J.U. Central Library	DSPACE & LIBSYS
IICB Library	DSPACE
CGCRI Library	KOHA

From the above table, it is clear that the library of IIMC is a fully automated library with LIBSYS software. The library of IISWBM is a fully computerized library with the software designed by the library. The J.U. central library use DSPACE & LIBSYS software for the computerization of library activities. The IICB library use DSPACE software for the automation of library activities. The library of CGCRI is a library automated by the KOHA software.

Table-7 : Main objectives of these Libraries towards Adaptation of Digitized Documents

Names of Libraries	Basic Motives				
	Long-term preservation	To get rid of traditional document (maintenance difficulty)	Easy availability of resources	To change the library into e-library.	To solve Space problem and easy portability
IIMC Library	✓		✓		✓
IISWBM Library	✓		✓		
J.U. Central Library	✓		✓		✓
IICB Library	✓	✓	✓		✓
CGCRI Library	✓		✓		✓

The above table shows some fundamental motives towards adapting e-resources. The main objectives of the library of IIMC are long term preservation, easy availability, and for portability. IISWBM, JU, IICB, CGCRI library follow the same. But no one of them wants to move their library into a fully e-library. These all are hybrid libraries, they procure print documents as well as e-resources.

Table-8 : Existence of Policy Regarding Digitization In these Libraries

Names of Libraries	Policy regarding digitization	
	YES	NO
IIMC Library		✓
IISWBM Library		✓
J.U. Central Library		✓
IICB Library	✓	
CGCRI Library		✓

It is clear from the above table that only IICB library has policy regarding digitization and others don't have any digitization policy.

**Table-9 : Emphasis given on Maintenance of Copyright Policies
Regarding Provision of giving e-Services:**

Names of Libraries	Copyright Policy Maintenance	
	YES	NO
IIMC Library	✓	
IISWBM Library	✓	
J.U. Central Library	✓	
IICB Library	✓	
CGCRI Library	✓	

The table shows that all of these libraries maintain the copyright policy regarding provision of access of e-resources. They all are concerned about this.

**Table-10 : Existence of Orientation Programs Conducted Regarding
Digital Document use in these Libraries:**

Names of Libraries	Orientation Programs	
	YES	NO
IIMC Library		✓
IISWBM Library		✓
J.U. Central Library		✓
IICB Library		✓
CGCRI Library		✓

From the table, It is found that there are no such arrangements for library orientations programs in these libraries for using the digital objects for the users.

**Table-11 : Distribution of Number of Impressions for Reprography in
these Libraries**

Names of Libraries	No. of pages permitted for reprography
IIMC Library	30 pages/day
IISWBM Library	30 pages/day
J.U. Central Library	30 pages/day
IICB Library	20 pages /day
CGCRI Library	30 pages/day

The above table shows that IIMC, IISWBM, JU, CGCRI library provide 30 impressions per day. The library of IICB provides 20 Impressions per day.

Table-12 : Existence of Institutional Repositories (IRs) in these libraries

Names of Libraries	IRs	
	YES	NO
IIMC Library	✓	
IISWBM Library		✓
J.U. Central Library	✓	
IICB Library	✓	
CGCRI Library		✓

The above table reveals that the library of IIMC, JU, IICB have institutional repository in their library. IISWBM and CGCRI they do not have IR.

Findings : Knowledge capital has become extremely vital for the present day societal developments. Nowadays the traditional view of the static information has been replaced by the dynamic knowledge objects. The older views of stand alone information utilities in libraries are replaced with newer idea of inter connected digital libraries. Library professionals are now working at the point of balance between the legitimate needs of the users of copyright works and the legitimate rights of copyright owners. Information has become a new capital and IPR laws particularly copyright law is the legal instrument through which it will be guarded to encourage market incentives.

Some of the important issues that are evolved while dealing with electronic information are briefly enumerated below:

- A. **The basic motives behind digital preservation:** We have observed that the followings are the four basic motives in the institutions we have surveyed
 - i. To save the contents of those materials, the paper forms of which are unlikely to survive long.
 - ii. To get rid of paper documents which are difficult to maintain.
 - iii. To make such contents available in an easy searchable manner.
 - iv. To save space and make contents more portable than traditional forms of document.
- B. **Digital Preservation Policy:** The first step to complete any work is to frame a policy. If the basic frame work is not made then the objectives of the work will not be achieved. In the same way in digitization there must be a policy. From the survey it is revealed that most of the institutions do not have any written policy regarding digitization. So the staff faces problems on how to provide services of those materials and the users also face difficulties to access those documents without violating Intellectual Property Rights.
- C. **Copyright Policy :** From the survey we have seen that most of the

libraries are concerned about maintenance of copyright policy regarding the provision of access of e-journals.

- D. **User Orientation Program** : Orientation programs help users to know about the usage, maintenance, and others factors related to e-resources i.e. copyright issues etc. These information are very much useful for the users of the library to access the e-resources effectively. We have seen from our study that most of the libraries do not conduct such kind of orientation programs to aware their users in the library.
- E. **Reprographic and Print Service** : Most of the institutions provide 30 impressions of a document per day but in some cases this is restricted up to 20 impressions.
- F. **Institutional Repository** : Nowadays institutional repositories are new concept that are being adapted by almost all libraries. It holds the scholarly and intellectual output of the parent institution as well as other and offers effective guidance to research community. The institutions we have surveyed most of them have institutional repository and some of them do not have IRs in their library.

Conclusion:

An understanding of IPR is particularly important in an academic, scholarly and artistic environment where creators are continuously using the works of others to build and shape their own thoughts, opinions, and indeed produce their own works. Although the problems of enforcement in the print-based world are not straight forward, it is even more problematic in the digital era where materials are freely available on the world-wide-web and the internet, and where it is difficult to differentiate between original works and copies of that work.

As this study represents an overview of digital libraries in Kolkata it can be said that these libraries are major purchasers of copyright protected works, both analog and digital, make such works available for patrons to browse, read and use. The librarians and information professionals do, where possible and to the best of their ability, protect against copyright abuse of library materials in collections.

Suggestions : Based on the findings of the study the following suggestions are recommended for overcoming the IPR problems on the digital contents in these libraries.

- The authority must conduct training programs for the users regarding how to use the digital resources effectively.
- Most of the time users are not familiar with copyright laws and the kinds of activities which lead to copyright breaching. So institution must arrange seminar, conference, and training courses for digital literacy among users.
- Awareness should be created to use e-journals and e-books to obtain current information.
- For benefit of the users, more computer terminals should be installed in the library.

- Provision of more funds is essential for digital sources and services.
- Information regarding the popular and the latest websites with their addresses for e-Books, e-Journal should be displayed on the notice board of the digital section.
- More efficient technical staff should be appointed and they should always be present in the internet section for expert advice.

References :

1. Intellectual Property, Intellectual Property Right, digital library. Retrieved August 8, 2012 from <http://dlis.du.ac.in/RC%20IN%20LIS/pdf/Presentations/Jnanendra%20Narayan%20Singh.pdf>.
2. Malwad, N. M. and Anjanappa, M. IPR IN DIGITAL ENVIRONMENT: ISSUES OF CONCERN TO LIBRARY COMMUNITY. INFLIBNET Centre, March NaN, 2001. Retrived August 05, 2012 from <http://hdl.handle.net/1944/130>.
3. Rao, S. S. (2001). IPR In the ensuing global digital economy. *Library HI Tech*, 19(2), 179-185. Retrieved August 5, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0737-8831&volume=19&issue=2&articleId=861272&show=abstract>.
4. Clausen, H. (2004). Intellectual property, the internet and the libraries. *New Library World*, 105(11/12), 417-422. Retrieved August 5, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0307-4803&volume=105&issue=11/12&articleId=860205&show=abstract>.
5. Urs, S. R. (2004). Copyright, academic research and libraries: balancing the rights of stakeholders in the digital age. *Program: Electronic Library and Information Systems*, 38(3), 201-207. Retrieved August 5, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0033-0337&volume=38&issue=3&articleId=862467&show=abstract>.
6. Zhou, Q. (2005). The development of digital libraries in China and the shaping of digital librarians. *Electronic Library*, 23(4), 433-441. Retrieved August 5, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0264-0473&volume=23&issue=4&articleId=1513454&show=abstract>.
7. Nicholas, J. (2006). Risk assessment and copyright in digital libraries. *Library Review*, 55(9), 545-548. Retrieved August 6, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0024-2535&volume=55&issue=9&articleId=1576418&show=abstract>.
8. Zhang, W. (2007). Digital library intellectual property right evaluation and method. *Electronic Library*, 25(3), 267-273. Retrieved August 6, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0143-5124&volume=29&issue=6/7&articleId=1736833&show=abstract>.
9. Abdulla, A. (2008). Copyright and knowledge advancement: a case study on the UAE copyright law. *Library Management*, 29(6/7), 461-472. Retrieved August 6, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0143-5124&volume=29&issue=6/7&articleId=1736833&show=abstract>.
10. Mahesh, G and Mittal, R. (2009). Digital content creation and copyright issues. *Electronic Library*, 27(4), 676-683. Retrieved August 6, 2012 from <http://www.emeraldinsight.com/journals.htm?issn=0264-0473&volume=27&issue=4&articleId=1810762&show=abstract>.

CHARGING AND DISCHARGING SYSTEM OF CALCUTTA AND JADAVPUR UNIVERSITY'S CENTRAL LIBRARY: A STUDY

PARIKSHIT MONDAL AND GOUTAM MAITY

Abstract : This paper discusses the circulation systems of the Calcutta and Jadavpur university libraries. It focuses on the equipments used and the charging and discharging procedure of both the universities. The merits and demerits of the circulation systems and comparative analysis of the circulation systems are ascertain. It also suggests some modifications for the existing systems.

Keywords: *Circulation systems, Jadavpur University, Calcutta University, Charging procedure, Discharging procedure*

1. Introduction

Library is a service centre. The use of library depends upon various factors. Circulation of library materials also depends upon the technical efficiency of the library. Circulation system is an important factor of library usage. After all the usage is the main motto of a library. Various method of circulation system is available in the market. Each and every method has some merits and demerits. Among the different methods one which is more advantageous is acceptable for all or it may be used to design a new method that will minimise problems and be sophisticated. University is a higher educational institution so; the latest technology is used in these institutions. We have taken two universities in Kolkata out of which one is the Calcutta University having PG level courses that carries traditional as well as technology based courses, on the other hand the Jadavpur University having UG and PG levels courses that carries mainly technology based and also carries traditional courses.

2. Circulation System

The charging or loan system is that part of a library's administration by which chiefly its communications with borrowers is carried on. The word loan applies to it because the books are lent out, and the word charging is used because every library, no matter how small, with any pretence at all at having a method, has some way of keeping account of these loans.

According to H G Bousfield, "A good circulation system should save the borrower's time, reduce costs, speed up charging and discharging, and allow circulation librarians maximum opportunity for professional work. These are sound and practical objectives." In emphasizing one of his points he drew attention to the fact that the "type of circulation system employed often determines the level of work circulation librarians perform; this alone justifies careful selection of the system best suited to a particular library. The separation of professional and clerical work, if not a major reason for introducing simplified circulation methods, is an important objective."(Kirkwood, 1961)

3. Circulation system of Calcutta University and Jadavpur University

3.1 Calcutta University circulation system

3.1.1 Equipments used :

- **Borrower's card**—The borrower's card is a very handy one as this one card is used for all the purposes in the library. It contains the user's name, department, course of study, validity of the card, a bar code, the identity number, and a photograph of the user on the front side. The backside of the card contains the personal details of the user. University staff, students and research scholars have library card too, but faculty members and officers have no card but maintain a register for library membership.
- **Book card**—Every book contains a book card where the name of the university and library is printed. It contains the accession number, call number and the title of the book. It is presented in a tabular format to make separate and easy entry of the borrower's card number, date of issue and date of return for every charging of the book.
- **Book pocket**—Every book contains a book pocket where the book card is kept. It is pasted on the last page or the inside of back hard cover of the book. It contains the library rules, accession number and call number but precisely the important and necessary ones.
- **Date label**—The date label is pasted on the inside of the front hard cover of the book. It contains columns where the return date of the book is being stamped and the gate pass number is noted. The information is also provided that this book is to be returned within the date stamped or written last stamp below.
- **Borrower's slips**—These are given to the borrowers to be filled up by them, the pre-stated areas on the basis of which the book(s) demanded is provided. It contains areas like the call number of the book, borrower's card number, author and title of the book, the accession number of the book, the respective date and the signature of the borrower. It also contains the signature of the issuer and gate pass number.
- **Gate pass**—the gate pass is a pass given to the borrower to allow him/her take the book(s) out of the library building. It contains the name of the university, the library and the gate pass number printed in it. Additional entries are issued date, issued to, the accession number(s) of the book(s) and the signature of the issuing person. There is space for the security staff checking the book(s) to put his signature.
- **Special gate pass**—Some time the library provides special gate pass for special causes like blinding/repairing/personal items/documents for inspection/block issue for department/others.
- **Fine slips**—There are overdue slips provided so that overdue amounts can be paid. The borrower has to fill in the required details of the book(s) for which he is paying the fine. The amount is calculated and posted

by the library staff in to the fine slip that can be paid by the defaulter at the cash counter.

- **Reminder card**—Generally issued to the staff, the faculty members and others. It's a formal letter mentioning the card number of the borrower and the date of issuing of the reminder and the details of the book(s) which has been with held by the defaulter along with the space for putting in the mailing address.
- **Computers and scanners**- Computers are used to make entries of books charged and discharged. The scanners are used to scan the bar code from the borrower's card and from the books where they are pasted in the form of stickers.
- **Other things**—
 - a. Stationary materials like pen, pencil, gum, etc.
 - b. Date stamp and ink-pad.
 - c. Filing trays for lending slips along with date guide cards.
 - d. Filing trays for book cards, etc.

3.1.2 Charging procedure :

The charging procedure starts with the user submitting the requisite book(s) at the charging counter along with the borrower's card and the borrower's slips, filled up as required. The person in charge of the counter takes them. He then scans the book(s) in the computer to make a record of the book(s) being charged and scans the bar code on the borrower's card to take the information as to whom the book(s) has been issued. Then he issues the books in to the computer with the help of soul software. He first takes out the book card from the book pocket and keeps it separately to be filed in later. Then he stamps the issue date on the book card along with the borrower's card number. He then fills up the gate pass slip and hands over the book(s), gate pass and the borrower's card to the user. He takes the lending slip(s) and writes the gate pass number in it and keeps it for filing. Lastly he stamps the return date along with the gate pass number on the date label. The book(s) is first checked by the security staff within the lending room and again before leaving the library building at the space specified where the gate pass is kept back. The charging procedure seems to be complete by now. But still some work is left which is completed later. It includes the filing of the book cards in the respective trays according to their call numbers. He also takes the lending slips of that particular day and arranges them in a serial number sequence as to the gate pass numbers and files the entire bunch behind the date guide card as of the return date and keeps it in the filing tray specified. The gate pass details are entered in a register at the gate and the slips are returned in the library for cross checking. This completes the charging procedure.

3.1.3 Discharging procedure :

The discharging procedure starts as one enters the library building. At the gate the book(s) is/are being checked. Then they are again checked inside the

lending room. The borrower then has to submit the book(s) at the discharging counter along with the borrower's card. The person in charge of the counter takes them and just makes an entry in the computer and scans the borrower's card bar code and makes the entry that the book(s) has been returned. If there is an overdue, the borrower is made to fill the overdue slip and pay the fine. Then the card is returned to the borrower. The discharging becomes apparently complete. Next the respective book card is taken out from the respective tray and the return date is put in it and kept back in the book pocket, after which the book is sent back to the stacks. The lending slip that has been stored is taken out from behind the respective date guide card and disposed off. This completes the discharging procedure.

3.1.4 Advantages :

- a. The discharging is fast and time saving.
- b. It enables the provision of dual checking to whether the book(s) issued has the date label stamped and the book card removed.
- c. It helps to keep multi-records of the users and the book(s) issued to them.
- d. It keeps dual records of the book(s) issued and the user issuing it/ them; one in book cards and slips and the other in the computer.
- e. The lending slips coming with "not found" helps to identify the books in demand whose availability is low.
- f. The borrower can keep back his/her card and use it in other sections of the library. It reduces the bulk and complexity of the cards.
- g. It makes the division of work easy as the staff may be rotated for doing the charging, discharging and filing work.

3.1.5 Disadvantages :

- a. The charging is a long and time consuming procedure.
- b. The number of equipments used in charging makes it complex.
- c. The lack of provision for re-issue of books hampers the user's interest.
- d. The lack of provision for reservation of books hampers the user's interest.
- e. The use of efficient staff would reduce the consumption of time as in case of gate pass checking, which done once is sufficient.
- f. The collection of over-dues is a lengthy process.

3.1.6 Suggestions for :

- Re-issue of books—The re-issuing provision must be kept for all the books kept for lending. It is the tendency of the borrowers to take the same book again and again whose only one or two copies are available. To stop that the re-issue period may be kept fixed like one book in two months can be re-issued once if not on demand, etc. or as needed. Or sufficient numbers of copies of the books in demand are to be kept so that this problem may be avoided. It may also be made online.

- **Reservation of books**—The provision for the reservation of books may be introduced as it is beneficial to the users very much. The provision may kept as a separate counter where demand slips will be available and when they are being filled is attached to the book cards so that when a book is returned it can be found out whether the book is in demand or not. Or where OPAC are in use the provision for reservation may be given at the time of search itself, which if connected to the main system would automatically update the status of the book as “reserved”.

3.2 Jadavpur University Circulation System

3.2.1 Equipments :

- **Borrower's card**—The borrower's card is in the form of tickets as used in the Browne's charging system where every borrower gets as many number of tickets as the number of books he/she can take from the department and central library. There are a variety of cards for the different users of the library likely as:
 - a. **Students**—The students get four/five tickets depending on the nature of the course; Under-graduates and the post-graduates. The information contained in the tickets range from the nature of course(u.g./p.g.), the time of the classes(day/night), name, department, roll number, section, issue date and the validity of the ticket(s) of the borrower. It also has the card number and the borrower's signature along with his/her photograph. The back side of the card has the borrower's local and permanent addresses along with the contact number.
 - b. **Staff/faculty**—It is in the form of a purse like structure where the necessary materials can be kept inside it. The Information contained in it includes volumes to be issued, card number, name of the borrower, designation, department, local and permanent addresses, and borrower's signature. The back side of the card contains information on the nature of service, date of joining and leaving, etc.
 - c. **Researcher**—These are for the researchers containing information like the borrowers name, department, designation, issue date and validity of the card, card number, etc. The back side of the ticket contains the local and permanent addresses of the borrower and the contact number.
 - d. **Ex-students**—There are cards for ex-students too. It contains information like the borrower's name, the number of volumes to be issued, the card number, year of admission and leaving, contact number, permanent and local addresses, the borrower's signature. The back side of the ticket contains information like registration number with year, the renewal date and the borrower's photograph.
- **Book card**—The book card contains information of the author, title, accession number, call number of the book and also mentions the name of the department where the book belongs. It contains columns where the date of issue of the book, the borrower's card/ticket number and the date of return is noted down.

- **Book pocket**—Every book contains a book pocket where the book card is kept. It is pasted on the inside of front hard cover of the book. It contains the accession number and library rules, precisely the important and necessary ones.
- **Date label**—The date label is pasted on the front fly leaf of the book. It contains columns where the due date of the book is stamped along with the borrower's card/ticket number. The information that the book is to be returned within the date last stamped is also provided.
- **Requisition slips**—The book requisition slip contains the details of the book that is to be given to the borrower. It contains information about the author (surname first), title along with the volume number(if any), classification number, book number, accession number, card number, reserved for date, signature of the borrower, the date of the particular day on which the book is asked for and the class and year of the borrower.
- **Demand slips**—There are demand slips for books that are to be placed on demand. It's to be filled up as per the date and time of placing the demand, author, title, call number borrower's card number by the borrower. The accession number of the book, signature of the borrower and the date of issue is to be provided at the time of borrowing. It is strictly used for the books "on demand".
- **Gate pass**—The gate pass is issued with every book issued out of the library. It has the card number of the borrower, the date of issue and the accession numbers of the book issued along with the signature of the issuer.
- **Fine slip**—The fine slip is used for collecting the overdue charges. It contains the areas like the borrower's card number, the due and return date, amount of fine and the fine paid, receipt number, date on which fine is paid and the signature of the payee.
- **Reminder card**—Generally issued to the staff and the faculty, it is a formal letter mentioning the card number of the borrower and the date of issuing of the reminder and the details of the book(s) which has been withheld by the defaulter along with the space for putting in the mailing address.
- **Computers**—computers are used to make entries of books charged and discharged.
- **Other things**-
 - Stationary materials like pen, pencil, gum, etc.
 - Date stamp and ink-pad.
 - Filing trays for book requisition/demand slips along with borrower's cards and book cards.

3.2.2 Charging procedure :

The requisition slip is filled up and dropped in the specified drop box. After about 30 minutes the slips are attended and the books found are arranged

according to the borrower's card number. When asked for by the respective card number, the borrower is given the book. The borrower's ticket, the requisition slip and the book card is pinned up together. The date of issue along with the borrower's card number is written on the book card. The date of return and the borrower's card number is noted on the date label too. Then the gate pass is issued and the book is handed over to the borrower to be taken out of the library. Checking is done at the gate and the gate pass is retained there. Apparently the book is being charged.

However the entire process is completed later. The pinned up borrower's card, book card and the requisition slip is arranged serially by the borrower's card number in the cabinet. The withdrawal is entered in the computer using the accession and borrower's card number from the requisition slip with the help of libsys software. The gate pass details are entered in a register at the gate and the slips are returned to the library for cross checking.

3.2.3 Discharging procedure

The discharging starts when the borrower returns the book at the library. The staff attending the discharge brings out the borrower's card from the cabinet using the details on the date label. If the book has an overdue it is calculated and the fine is to be paid. Till the receipt of fine payment is produced the borrower's card is held back. The card is returned to the borrower, the date of return is posted in book card and kept back in the book pocket then the book is sent back to the stacks. The check-in entry is made later in the computer. There is provision of re-issue and hence may be done if the user wants it.

The book on demand service—There is a book on demand service but is restricted to the books on engineering discipline. There the demand slips need to be filled up and are arranged according to the submission of the slips. If a book is on demand, then they are kept separately and the user giving the demand first is allotted the book. 15 days are awaited for the user, failing which the book is given to the person next in order of arrangement. It is done for those books which are less in numbers; otherwise users are given books irrespective of their allotted number. If not on demand the book is returned to the stacks.

3.2.4 Advantages

- a. It gives a specific idea as to how many books have been issued even if the machine fails.
- b. The mostly demanded books being kept separate makes their access very easy.
- c. The demand system acts in a way for the reservation process.
- d. The separation of the cabinets for the filing of the borrower's cards makes the process easy and less time consuming.

3.2.5 Disadvantages

- a. The entire process is manual yet no records are kept manually.
- b. If the computer system undergoes a failure then, data on the entire process is temporarily lost.

- c. Without the computer it is not possible to notify which book is with which borrower.
- d. The fine collection is time consuming because fine is collected at the main cash counter.
- e. The demand slips are not scientifically kept.

4. Comparison of Charging System of Calcutta University and Jadavpur University Central Library.

4.1 Borrower's Card—Calcutta University has only one library card for all purpose of the library. Students, research scholars, ex students, staff have library card but faculty members and officers have no card and only register is maintained for them. Jadavpur University provides library cards for all members and number of cards according the nature and number of books can issue.

Jadavpur University introduces card for all members It is very healthy but is very cumbersome because lots of cards are necessary for circulation. On the other hand Calcutta University still now has not introduced cards for faculty members and officers, but there is card for other which is only one in number and that is very eye-catching one.

Both the university is in unhealthy situation because of the problems of the card. If it is only completely automated, then one card is sufficient but till now both the universities run a combination of traditional and automated system. It concludes that it requires one card and having the pocket system that can insert the lending slips and identify how many books they issued.

4.2 Book Card—Both the universities provide the same information at the time of charging and discharging of the books for maximum users. But in case of faculty members and officers, in the book card CU provides the name of the borrower because there have no library cards. Jadavpur university library's book card has additional information that is name of the department because most of the department have departmental library.

The writing of borrower's name is very time consuming so it is mandatory to prepare the library card for all members. In Jadavpur University the book cards are kept within the borrower's card and arranged according to borrower's card numbers. If the machine is hanged, it is not possible to identify whom a particular book is charged. In CU it is very easily identifiable because the book cards are arranged according to call number.

4.3 Book Pocket—The position of the book pockets are differs. In Calcutta University, the book pocket is pasted on the last page or the inside of back hard cover of the book. But in Jadavpur University, the book pocket is pasted on the inside of the front cover page. Both the book pockets contain the library rules and accession number but Calcutta University's book pocket provides extra information that is the call number of the book.

The position of book pocket is better in Jadavpur University because the book pocket and the date label are nearer and can be accessed at the same time when the book is open. This can save the time of the library staff as well as the library users.

4.4 Date Label—The position and the information on date label is different from each other. Calcutta University's date label is pasted on the inside of the front cover of the book and Jadavpur University's date label is pasted on the first fly leaf. It contains columns where the return date of the book is being stamped for both the library but in addition CU provides gate pass number and JU provides the borrower's card number. The information is also provided that the book is to be returned within the date stamped or written below.

Gate pass number is the best solution for CU because it can easily search the lending slip and with the help of lending slip the document also. But in JU it is not possible by gate pass number because the book cards are not arranged by the call numbers. Here the gate pass number is immaterial. The position of date label of JU is more advantageous than CU for typing the date stamp and writing of card number.

4.5 Borrower's Slips—Both the borrower's /requisition slip contains areas like the call number of the book, borrower's card number, author and title of the book, the accession number of the book, the respective date and the signature of the borrower are same. Calcutta University provides the gate pass number and issued by on the other hand Jadavpur University provides class, year and reserved for are the extra information.

CU provides the gate pass number in the borrowers slip that helps to arrange the borrowers slip according to date guide of the date of return. Signature of the issuer can help the library professional to identify if anybody makes a mistake. JU provides some extra information because the nature of the library differs. UG and PG students are the members of the library that is the reason to mention the class and year in the requisition slip for them.

Jadavpur University provides demand slip for demand and reservation of the books. But CU has no reservation system. The demand system of JU is not satisfactory. The demand slips are kept for reservation of another place and has to be checked it on regular basis but there is no such provision for any scientific method that will automatically bring the demand slips on note regularly. The best solution to the reservation is that the demand slip must be kept with the lending slip or book card that can automatically be checked out when the book come to the library for reissue or return.

4.6 Gate Pass—Both the universities gate pass contain more or less same information. Calcutta University provides extra information like signature of the security staff. Special gate pass also issued for special causes like binding/repairing/personal items/documents for inspection/block issue for department/others. Gate pass are collected at the gate and prepare the list of issued books per day and hence the statistics of the issue.

4.7 Security—CU security system is better than JU. The books and gate pass are checked twice in the library but at JU it checks only once at the gate. Double checking system is better to minimise the error.

4.8 Fine—Both the university provides fine to the borrower but still now Calcutta University has not introduced the fine for faculty members. Calcutta University

has another advantage that they can provide fine payment within the library but Jadavpur University has no such type of facility.

4.9 Semi Automated—Both the university library started the semi automated circulation system. Calcutta University library is run by soul software and Jadavpur University is run by libsys software. Calcutta University has completed bar-coding the books and the borrower's card. Charging and discharging system is run with the help of scanners. But in Jadavpur University there is no barcode system so they enter data by manual typing. Jadavpur University have started RFID technology, so after implementing of this technology whether it runs satisfactorily and automatically or not will be an issue of concern but presently it is not.

5. Conclusion

Circulation system of CU and JU run satisfactorily according to their views of the respective library staff. They have implemented library automation and automated circulation system. But both the library still now follows the manual system. Each and every one has some advantages and lacunas. The study reveals that CU circulation system is more automated and more advantages. The borrower slips are arranged according to gate pass number along with the date guide that can help the staff to know the overdue and the book cards are arranged according to call number that can help to simply identify the books that are issued and to whom. But it lacks information to how many books are issued a particular user in manual system but the use of computer can solve the problem. But JU lacks both the facilities presently but with the help of computers it can solve the problem. On the other hand CU has no demand or reservation system but JU has partial reservation system which is not satisfactory.

Reference

- Kirkwood, L.H. (1981). Charging Systems In R. R. Shaw (Ed.), The state of library art, Vol. 2 Part 3; New Brunswick, NJ: The Graduate school of Library service, Rutgers, The State University. Retrieved 8.3.12 from http://archive.org/stream/chargingssystemsv_006772mbp/chargingssystemsv006772mbp_djvu.txt. Retrieved on 08.03.2012
- <http://www.caluniv.ac.in/libraries/library.html>
- <http://www.jaduniv.edu.in/library.php>

INFORMATION SOURCES AND SERVICES OF THE LIBRARIES OF THE TWO DIFFERENT TYPES OF ACADEMIC INSTITUTES: A STUDY

PALLAB SAHA BISWAS AND SUMITA PAUL

Abstract : Indian Institute of Technology (IIT), Kharagpur and Indian Statistical Institute (ISI), Kolkata are the two prominent institutions in India as well as the World. The libraries of the two different types of academic institutes are playing a vital role in the dissemination of information. The libraries of the two different types of academic institutes are doing the activities like selection & collection of information, preservation & digitization of information, organization of information, retrieval of information and dissemination of information. This study analyses the structure and services provided by the two different types of academic libraries in India in a lucid manner.

Keywords : IIT, ISI, Information Sources, Information Services, Digitization, Databases, E-resources, RFID Technology

1. Introduction :

Information services based on the actual or potential information needs of the user, and afford a series of interconnected information collection, processing and provision of services. Library and Information Science is a field devoted to help users, find relevant information sources and to organize information and provide the same.

The Central Library, Indian Institute of Technology, Kharagpur (IIT Kharagpur or IIT KGP) started in a small room of the Institute old Building (Sahid Bhavan) in the year 1951, and moved to its present premises in 1956. The Central Library, IIT, Kharagpur is one of the largest and finest technical libraries in this part of the world. The Library is well equipped with modern facilities and resources in the forms of CD-ROMs, online databases, micro-documents, video cassettes, books, journals, patents, standards, theses, report etc. A Well-equipped Digital Library is one of the most important sections of the Library. The Library has been using the LIBSYS, an integrated library management software package, with all the modules for automated library operations. The Central Library being a member of INDEST-AICTE Consortium under the aegis of the Ministry of Human Resource and Development, provides online access to many important science and engineering abstracting database services, such as COMPENDEX and INSPEC, MathSciNet, SciFinder Scholar, Web of Science, etc, and several full text journals and Indian Standards. The Central Library Webpage provides online link access to all these e-resources.

The Central Library of Indian Statistical Institute (ISI, Kolkata) is located at Kolkata with a network extending to other locations of the Institute. The Library

moved to its present location in 1978. The Central Library at Kolkata has over 200,000 volumes of books and journals besides many official reports, reprints, maps, microfilms and microfiches. It receives about one thousand scientific and technical journals annually. The ISI Library has attained the distinction of being one of the richest libraries in India in the areas of Mathematics, Statistics, Economics, Theoretical Computer Science and related areas. The Institute offers a course leading to Associateship in Documentation of Information Science, conducted by the Documentation Research and Training Centre (DRTC) of ISI, Bangalore.

2. Objectives of the Study :

- A. To Identify the different types of services providing by the libraries of these institutes to its users.
- B. To make a comparative study among various sources & services available in the libraries of these two Institutes.
- C. To identify the library services, library collections and other resources available in the libraries of the Institutes (IIT Kharagpur, ISI Kolkata).
- D. To identify the different tools and techniques for collection and dissemination of information.
- E. To know about the access system of the various sources & services in modern age.
- F. To identify the different types of information on different aspects of management studies and other disciplines.
- G. To put suggestions for betterment of the procurement of the different sources for providing better services of the libraries of these Institutes.

3. Scope and Coverage of the Study :

This study covers the two academic institute's libraries of Kolkata city. These are as follows :

- Indian Statistical Institute, Kolkata.
- Indian Institute of Technology, Kharagpur.

4. Methodology of the Study :

A Pilot Survey was done initially at the first stage of this study. Based on the pilot survey, a questionnaire was designed with unstructured mode followed by interview. Also observation method has been used by personally visit to the different section of the libraries. Library Website, Library Handbook, Library Manual, Annual Report were also consulted to get a correct picture of library history, its services etc. Data collected with the help of the questionnaire and interviews were processed into tabular form followed by interpretation, suggestions, and conclusions are drawn at the end of study.

5. Analysis of Data :

Table-1

5.01. Distribution of Library Hours of the Academic Institute Libraries.

Name of The Institute	Library Hours		
	Weekdays	Saturdays	Sundays
IIT	From 8 am to 12 midnight	From 8 am to 12 midnight	From 8 am to 12 midnight
ISI	From 10 am to 8 pm	From 10 am to 6 pm	From 10 am to 6 pm

The above table shows the timings of IIT Library is open at 8 am and it close at 12 O' Clock midnight on Weekdays, Saturdays, and Sundays. IIT library opens for 16 hrs. per day. On the other hand, ISI library is open from 10 am to 8 pm in weekdays. It is also open on Saturdays and Sundays from 10 am to 6 pm.

Table-2

5.02. Distribution of Printed and Non-printed Documents in the Academic Institute Libraries.

Document Type	IIT	ISI
Books & Monographs	2,46,800	1,90,000
E-Books	20,000	2000
Current Journals	225	500
E-Journals	555	2500
Bound Journals	1,25,000	65,000
Theses/Dissertations	4456	360
Reports	—	300,00
CD ROMs / DVDs	5500	1300
Microfilms & Microfiche	1500	5000
Online databases (bibliographic & full text)	18	6

The above table shows the distribution of total number of books, current journals, E-Journals, Bound Journals, Theses & Dissertation, Reports, CD ROMs/DVDs, Microfilms & Microfiches, online databases in IIT Kharagpur Library, ISI Kolkata Library. The users of both the two libraries are very much familiar with the electronic documents. They are using the electronic documents are gaining importance day by day among the users of the Academic Libraries.

Table-3

5.03. Distribution of Book borrowing facilities available in the Academic Institute Libraries.

Name of The Libraries	Students		Faculties		Research Scholars		Staff	
	No. of documents	Duration	No. of documents	Duration	No. of documents	Duration	No. of documents	Duration
IIT	5	60 days	10	180 days	8	90 days	5	90 days
ISI	4	30 days	8	30 days	6	30 days	6	30 days

The above table shows the distribution of total no. of books that can be borrowed by the users of the IIT and ISI library. The no. of books is varied on the basis of patron type.

Table-4

5.04 Types and numbers of patrons in the Academic Institute Libraries.

Patron Type	IIT	ISI
Student	9000	1000
Faculty Members	700	500
Research Scholars	700	100
Staff	2000	200
Officers	25	50
Total	12425	1850

The above table shows the distribution of type and number of patrons in the IIT and ISI library. The chart also shows that IIT Kharagpur Library has total 12,425 patrons which include 9000 students, 700 faculty members and 700 research scholars, 2000 staff members and 25 offices. ISI library has 1,850 patrons which include 1000 students, 500 faculty members and 100 research scholars, 200 staff members and 50 officers.

Table-5

5.05. Application of RFID Technology in the Academic Institute Libraries.

IIT	ISI
IIT Kharagpur library uses RFID reader at the exit gate and also provide self check-in and check-out through RFID Technology.	ISI Kolkata library uses RFID reader at the library exit gate for security purpose.

The above table shows that IIT Kharagpur library uses RFID reader at the exit gate for the security purpose. Library also provides opportunity of self check-in and check-out of library materials. ISI Kolkata uses RFID reader at the library exit gate for security purpose. ISI Kolkata does not provide self check-in and check-out of library materials.

Table-6

5.06. Distribution of processing of Documents followed by the Academic Institute Libraries. Contd.....

Name of The Institute	Accessioning	Classification System	Cataloguing Manual	OPAC	Web OPAC	Indexing	Bill Processing	Stamping
IIT	Yes	Yes DDC	AACR2R	Yes	Yes	Yes	Yes	Yes
ISI	Yes	Yes DDC	AACR2R	Yes	Yes	Yes	Yes	Yes

Distribution of services rendered by the Academic Institute Libraries

Name of The Institute	Tagging	Labelling	Data entering into the computer	Shelving of the document	Maintaining the Authority file
IIT	Yes	Yes	Yes	Yes	Yes
ISI	Yes	Yes	Yes	Yes	Yes

The above table shows that the library of the ISI and IIT follows the systems of processing of documents like accessioning, classifying of the documents through DDC scheme, Cataloguing of documents through AACR2R, Indexing, Billing, Stamping, Tagging etc. IIT and ISI library also provide OPAC system and WebOPAC system for catalogue searching. ISI library has old card catalogue which is still available.

Table-7

5.07 Distribution of online database services of the Academic Institute Libraries

Name of The Institute	Name of The Database	No. of Journals
IIT	Total 18 databases which includes SCOPUS, MathScinet, JCCC, J-Gate, JCPDF, Scifinder etc.	2367 +
ISI	ACMDL, IEL, MathScinet, Science Direct, Springer Lnk, Jstor etc.	2500 +

The above table shows the different databases that can be accessed by the IIT Kharagpur library, ISI Kolkata library. IIT library subscribed total 18 databases which includes 13 full text and 5 bibliographic databases namely SCOPUS, MathScinet, JCCC, J-Gate, JCPDF, Scifinder etc. The ISI library subscribes

total 6 databases which include ACMDL, IEL, MathScinet, Science Direct, Springer Link and Jstor etc.

Table-8

5.08 Distribution of Digital Library Service of the Academic Institute Libraries.

Name of The Institute	Digital Collection
IIT, Kharagpur	IIT Kharagpur library provides Digital Library Service. The Digital Library Section maintains a large number of Digital Collections like CD / DVD ROMs. IIT digital library also provides database service namely CMIE (Centre for Monitoring Indian Economy), JCPDF and Scifinder. Reprography section, Console Room, Current Periodical display room, Bound volume stack areas etc, and these sections are fully digitized collection.
ISI, Kolkata	ISI library does not provide Digital Library Service.

The above table shows that IIT library provides Digital Library Service to its users. The library of ISI Kolkata doesn't provide any Digital Library Service to its user.

Table-9

5.09 Distribution of other services rendered by the Academic Institute Libraries.

Services	IIT	ISI
CAS	Yes	Yes
SDI	Yes	Yes
News paper clipping service	No	No
TOC (Table of Content Service)	Yes	Books only
Photocopying Service	Yes (Timing 8 am-8 pm, and 0.50p per copy for students, scholar, staff, teacher is free)	Yes (Timing 10 am-8 pm and 0.60-1.40p per copy for student, scholar, staff, teacher is free)
Printing Service	IIT library doesn't provide any printing facility to its users.	Restricted to some cases
Extension Service	No	Book exhibition on contemporary issues.
User Education Services	User Orientation program is conducted for students and users.	User Orientation program is conducted annually.

The above table shows that the various alerting services provided by the Academic Institute Libraries to their users. Both IIT and ISI library CAS, Table of Content Service and SDI Services to their users on the recent developments in the field of technology and statistics respectively. IIT library doesn't allow their users for taking printing facility. But ISI library provides printing service to their users. IIT library does not arrange any library extension service for its users. On the other hand ISI library arrange book exhibition on contemporary issues. ISI and IIT library also conduct user orientation program.

Table-10

5.10 Distribution of Institutional Digital Repositories of the Academic Institute Libraries.

Name of The Institute	
IIT, Kharagpur	Yes IIT have their own Institutional Digital Repository. They are using DSpace Software for Institutional Digital Repositories. It includes PhD Theses, Dissertation and scholarly publication of The Institute.
ISI, Kolkata	Yes ISI have their own Institutional Repository. They are using DSpace Software for Institutional Digital Repository. It includes PhD Theses, Dissertation and Scholarly publication of The Institute

From the above table shows that IIT and ISI library have their own Institutional Repository. Both the library uses DSpace Software for IDR. Both the library make repository of PhD Theses, Dissertation and Scholarly Publication of their students, research scholars and faculties. Therefore through library homepage users can access these works.

6. Conclusion and Suggestlons :

From the above study we can conclude that, there are huge collections of information resources in the two Academic Institute Libraries. But proper utilization of resources is not there. There is no library Co-operation among the Academic Institute Libraries. Co-operation is possible In following areas:

- A) Acquisition of Documents
- B) Processing of Documents
- C) Documentation Service
- D) Translation Service
- E) Reprographic Service
- F) Abstracting & Indexing Service
- G) Preparation of Union Catalogue
- H) Inter Library Loan Service

The following services should be implemented by the Academic Institute Libraries—

- i) By selecting and preparing reproduced documents from the texts most needed by users.
- ii) By providing general and particular nature of Information by means of documentation and bibliographic work.
- iii) By diffusing said publications among all those concerned a better knowledge of methods and technical means, to promote of scientific research all over the world.
- iv) ISI library should allow the journals, bulletin and CD-DVDs for home issue.
- v) IIT and ISI library should arrange user orientation program monthly, quarterly basis.
- vi) Conducting Bookfairs at least once in a year.
- vii) By keeping up-to-date reference sources and catalogue.
- viii) Application of modern technologies.
- ix) The library professionals must acquire academic and professional qualities. They should acquire IT related knowledge and skill and some personal qualities for providing good quality library services to its users.

7. References :

- i) <http://www.iitkgp.ac.in> (Accessed on 20.07.2012)
- ii) <http://www.isical.ac.in> (Accessed on 30.07.2012)
- iii) CHATTOPADHYAY (Tridib). An Analytical study of the two important management institute libraries of Kolkata in the cyber age with a view to challenges and opportunities ahead. CUJIS. 13; 2011; 17–28.
- iv) POTTER (WG). Recent trends in state wide academic library consortia. Library Trends. 45, 3; 1997; 416–434.
- v) Singh, S.P. (1999). Reader's services in IIT Libraries (India) : A Comparative study. Library Herald. 37 (3), 167–185.
- vi) <http://www.library.iitkgp.ernet.in>
- vii) HEERY(Mike) and MORGAN (Steve). Practical strategies for the modern academic library. ASLIB, The Association for Information Management. London; 1996.

DIGITAL PRESERVATION IN STATE ARCHIVES OF WEST BENGAL: A STUDY

ASHES DATTA, JISHNU BHATTACHARYA AND DEEP KUMAR KIRTANIA

Abstract : This paper aims to provide a vivid picture of the digital preservation scenario in the State Archives of West Bengal. The methods and techniques used in the archives regarding policies and procedures, staffing, finances, digital content, access to metadata, technology have been discussed in this study. The authors, have tried to identify those problems faced by the archives administration in the preservation context of documents and have tried to provide a possible solution to overcome those problems.

Key Words : Digital Preservation, West Bengal State Archives.

Introduction :

The advent of digital preservation came as a most wonderful gift and welcome solution against this problem. It not only preserves analogue or print documents by retaining their original look but also takes into account of those inborn digital documents. The primary objective of digital preservation is to create databases of content to facilitate access, preservation and dissemination of information to multiple audiences, at a time and for longer period. The effective and efficient use of print as well as non print materials can only be done through digital preservation and this feature enhances the utmost importance of Digital Preservation. This paper explores the techniques and methods used for Digital Preservation in West Bengal State Archives by highlighting their policies and strategies, infrastructural facilities, standards, user services etc, regarding digital preservation. It also identifies the problems faced by the staff of West Bengal State Archives regarding digital preservation works and tries to give possible solutions out of those.

Objectives :

The objectives of the study are:

- To explore the methods, techniques and processes which are used in digital preservation in West Bengal State Archives
- To understand the policies and strategies regarding digital preservation.
- To observe the technology of digital preservation.
- To observe the funding for digitization in West Bengal State Archives
- Describing the user services which are concerned with digitally preserved materials.
- To observe the standard of digitally preserved records.
- Providing best possible solution/ suggestion to overcome those problems.
- To identify the problem faced by the archives in digital preservation.

Scope and coverage: In this paper, we have studied the preservation process of West Bengal State Archives. The West Bengal State Archives is the oldest repository of noncurrent records of the pre-colonial, colonial and post-colonial periods. The State Archives functions from its three offices, the Historical section at 6, Bhawaní Datta Lane, Kolkata-73, Current section at Writer's Buildings, Kolkata-1, and Functional building at 43, Shakespeare Sarani, Kolkata-17. The records preserved in these three buildings are unique in nature having immense research and administrative value. The study covered some demographic characteristics of archives i.e., preservation structure, policies, procedures, staffing, budget, standards, problems, etc.

Methodology: This study is based on survey methods. The survey work includes field visit for primary data collection. Initially different literatures have been consulted to supplement the survey. At first, the basic information is collected through literature on digital preservation and archiving of Digital materials. A structured questionnaire has been prepared. In the next stage, the staffs of West Bengal State Archives are questioned using scheduled methods. The staffs are randomly selected and interviews are also done to the same persons. At the last stage, the collected data have been summarized and tabulated in different tables considering different point of views. Then the tabulated data have been analyzed. The data have been represented using different statistical techniques. Lastly, conclusions are made on the findings.

Policies for Digital Preservation In West Bengal State Archives:

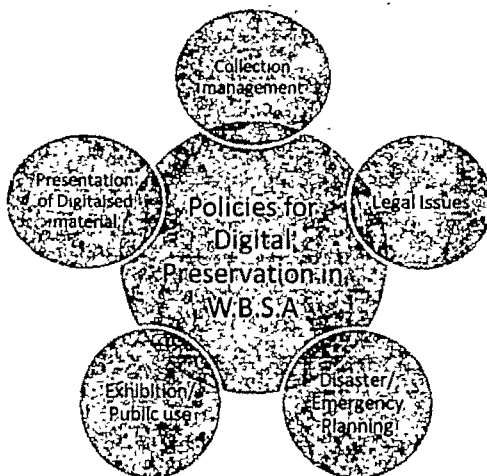


Figure-1 : Digital Preservation policy In West Bengal State Archives

Policies of Digital Preservation Activities :

There are five fundamental areas where policies and strategies have been implemented in West Bengal State Archives for the purpose of Digital Preservation. Those are as follows:

- **Collection management:** Being a state government organization government files, Intelligence Bureau's records, political records form the major portion of the collection of archival records in West Bengal state Archives. As it is the oldest repository of noncurrent records of the pre-colonial, colonial and post colonial periods, its collection also covers such documents which has immense archival value e.g. Glass records, Photographic records, Microfilms, Survey maps, History sheets, Rare books etc. The documents received by the archives are arranged according to departmental Batch number and for the other kind of documents. A unique kind of classification system is followed by the West Bengal State Archives staff.
- **Legal Issues:** Following policies are taken regarding legal issues in West Bengal State Archives.
 - i. Only those government documents are selected which are more than 30 years old.
 - ii. Only 30% of original documents are allowed for reprography.
 - iii. Only the contents of the documents and their respective locations will be given in the website.
 - iv. Only those documents will be chosen for digital preservation whose authors have died more than 60 years ago.
- **Disaster and Emergency Planning:** To protect the materials from any kind of disaster or emergency which may be manmade or natural, the West Bengal State Archives prepares several copies of the digitized documents and keeps them several places of the three branches. So, if any record is found destroyed it can be accessed through its several backups.
- **Exhibition and public use:** West Bengal State Archives is used to arrange one exhibition per year, where its rare documents collections are exhibited. To avail any kind of information, the user/student/scholar must have the recommendations from his or her parent organization or from the directorate of West Bengal State Archives. A website will be launched soon from West Bengal State Archives where contents of digitized documents will be available.
- **Preservation of Digitized material:** The West Bengal State Archives used to changed (i.e., CD/DVD) after every five years and several backups of digitized materials is made.

Staff Strength :

Sl. No.	Categories	Quantity	Educational Qualification	Experience	Training Programme /Workshop	Remarks
i.	Chief Archivist	1	M.A, 1 year diploma Course In Archives and Record Management (NAI, Delhi)	Minimum 10 years experience In govt./ bank/ corporate Archives		Responsible for all the activities In archives
ii.	Assistance Archivist	2	M.A, 1 year diploma Course In Archives and Record Management (NAI, Delhi)	Minimum 2 years experience In govt./ bank/ corporate Archives		To assiste the chief archivist In archival activities
iii.	Reprography In charge	1	M.Sc., Diploma In Computer Applications	Minimum 5 years experience In govt./ bank/ corporate Archives	One year training programme, NAI	Responsible for all the activities In reprographic section
iv.	Technical Staff	5	Masters In any Stream with sound knowledge In computer	Minimum 1 year experience In govt./ bank/ corporate Archives	Three month training programme, W.B.S.A.	Group "D" Staff

Table-1 : Staff Strength for Digital Preservation In W.B.S.A**Source of Fundings :**

In order to adopt the policy of digital preservation which is generally a costly process, West Bengal State Archives has to rely mainly on the state government which includes 75% of the entire budget, next 20% is generally provided by the central government. While the remaining 5% is achieved through donations from the social welfare organizations and volunteers.

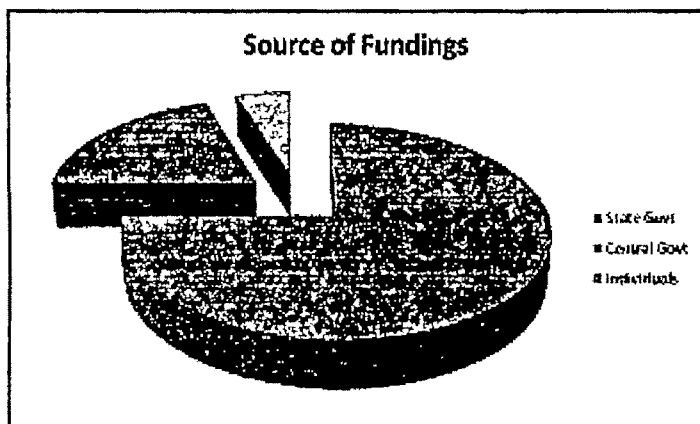


Chart-1 : Pie Chart for source of fundings

Last five years Budget for Digital Preservation In West Bengal State Archives :

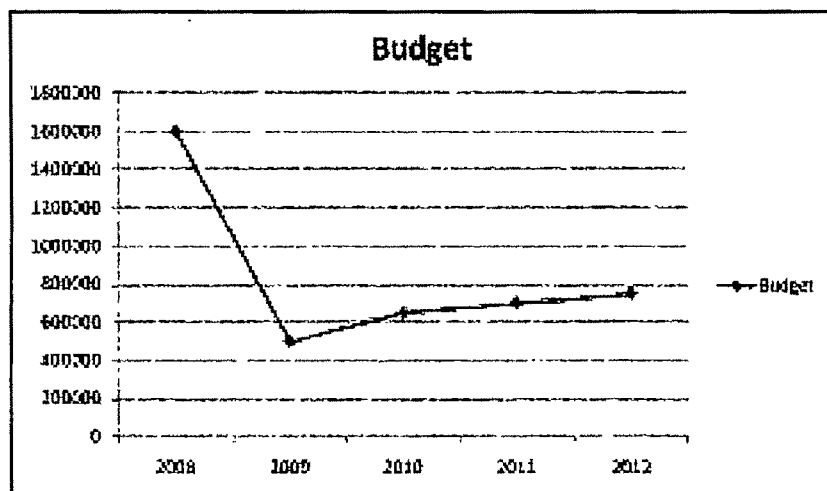


Chart-2 : Last five year budget for Digital Preservation In W.B.S.A

The above budget for West Bengal State Archives for the last five years varies in terms of money spent for digital activities. The graph plotted here indicates that the cost incurred in the year 2008 was high because of the initial investment for buying Book Eye scanner and installation of computers which forms the basic foundation of the digital preservation process. In the very next year the curve declined significantly because only the cost for maintenance and the cost of other accessories were involved. After that the curve starts to climb up again as the maintenance and accessories cost increases every year at a gradual pace.

Materials for Digitization :

Sl. No.	Items for Digital Preservation	Item Descriptions	Quantity	Whether Digitization is done or not?	Total cost to incurred (In be rupees, approx.)
1.	Glass Records	Glass Records was a British Independent record label which operated from 1981 to 1989, ^[1] if GLASS 001 and GLASS 002 were issued in 1979 and 1980 respectively.	36000 pcs.	Yes	1000000
2.	Photographic Records	Records taking the form of pictures, or photographs, sometimes with related textual records.	8000 pcs.	No	20000
3.	Microfilm Records	A film on which printed materials are photographed at greatly reduced size for ease of storage	91 Boxes	No	144000
4.	Survey Maps	Survey maps are maps that show altitude in relation to a 'known' ordnance datum.	1000 pcs.	No	60000
5.	PWD Records		2000000 pages	No	28000000
6.	Govt. Files	Files which contain information about a government individuals, files and other documents	1500000 pages	No	21000000
7.	Political Records	Records that deals with political movements, campaigns, etc.	300000 pages	No	4200000
8.	Intelligence Branch Records	Records of Immense Importance that are not disclosed to the public	500000 pages	No	7000000
9.	History Sheets	Sheets of paper depicting pictures, earlier events, maps, etc.	1300 pages	No	18200
10.	Rare Books	Those books which are of Immense Importance but are not printed, published or available in the market	200000 pcs.	No	600000

Table-2 : Materials for Digital Preservation In W.B.S.A

Flow Chart of working procedure for Digital Preservation in West Bengal State Archives

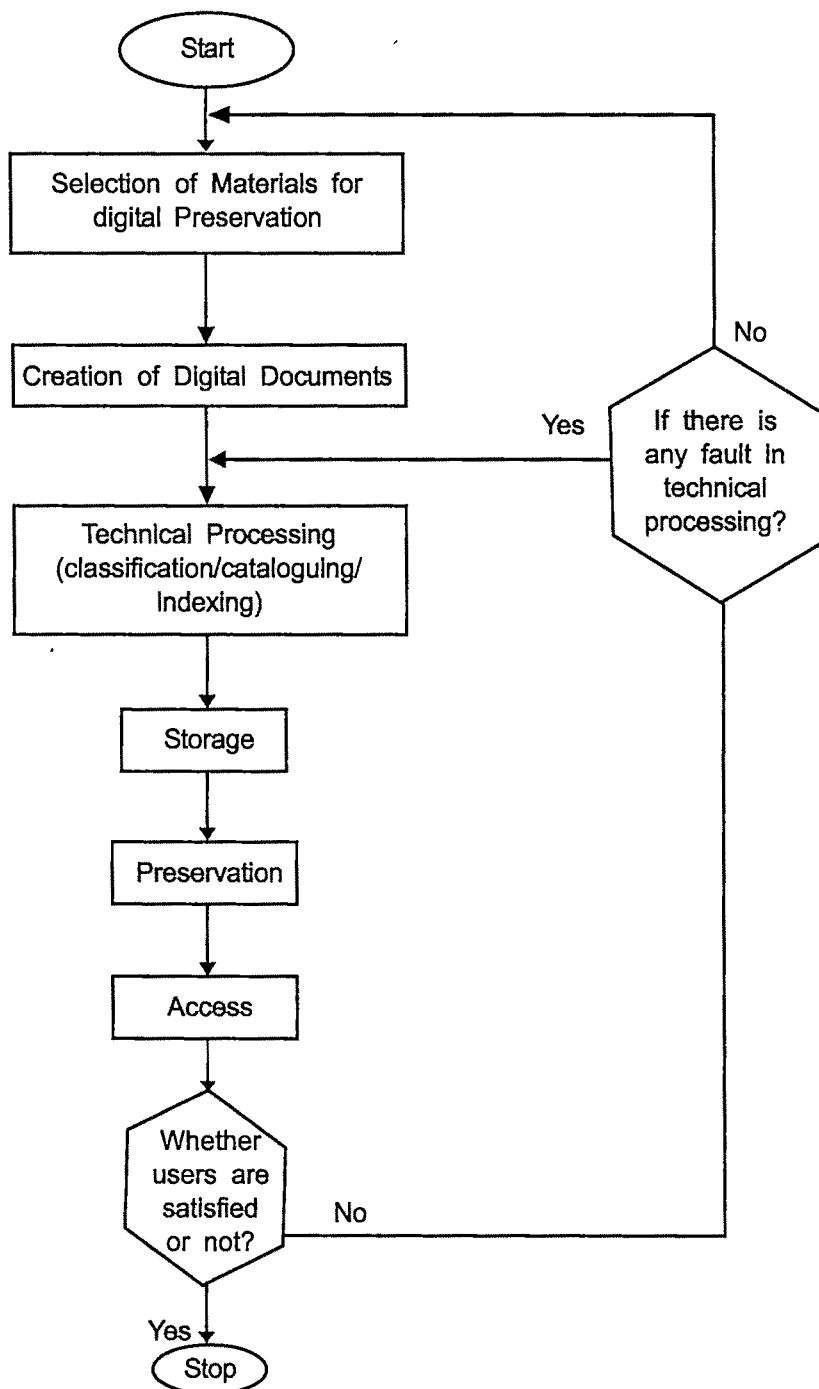


Chart-3 : Flow Chart of working procedure for Digital Preservation In West Bengal State Archives



Picture-2 : Digitization process of West Bengal State Archives

The Basic Schema of Information Management through Digital Preservation In the West Bengal State Archives:

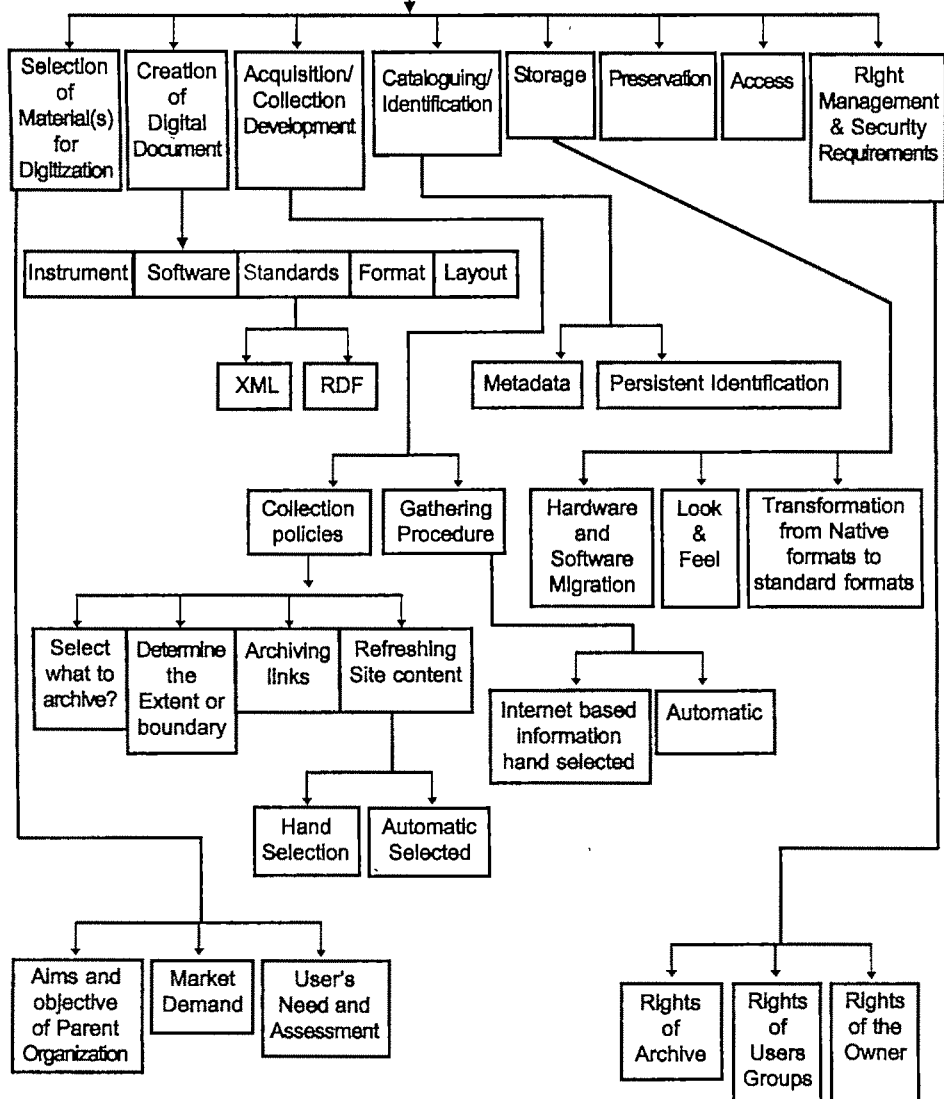


Chart-4 : The Basic Schema of Information Management through Digital Preservation In the West Bengal State Archives

Services :

SL No	Name of the Service	Stakeholders involved	Mode of Acceptance	List of documents required	Transaction Volume (provides last 3 year detail)	Brief process description	Most time consuming activity	Challenges in service Delivery	Improving service
1.	Record Management	Record creating agencies & State Archives	Manual Forms	Records Act, Manual for records management.	IB records & CID Gazette; 200Bundles/ vols.	Correspondence with creating agency; Appraisal; Subject-listing; Transfer of record.	Appraisal & Subject listing.	In absence of Public Records Act In West Bengal, transfer of record is irregular.	Public Records Act for systematic Records Management
2.	Conservation: Physical preservation	Technical staff of Archives; Suppliers of conservation materials and machineries.	Do	Manual for Scientific Preservation; Archival Records; Quotation, Bill & other Correspondences.		Purchase of conservation material; Repair of old & brittle records following scientific preservation methods & binding.	Process of repairing	Absence of Scientific officer & adequate no of trained employee.	Appointment of scientific officer & trained personnel; Overall UP-gradation of the conservation unit.

3.	Conser- vation: Reprod- uction	Technical staff of the State Archives; Suppliers of Machineries & articles; Expert Agencies.	Do	Archival records & other documents quotation, bill & correspon- dences.	Reproduction for preserv- ation: 36000 glass & film records tran- sferred from the intelligen- ce branch; reproduction for scholars' service.	Xerox; Scan; Digital editing.	All the steps.	Lack of modern infrastru- ctural facilities.	Installation of adequate number of modern devices.
4.	Preserva- tion of Reference Media	Archival officers.	Do	Archival Records	Board of revenue; 78 bundles. Character books: 17 vols. Home press: 2114 files. Labour General Department: 4810 files. Medical & public health: 1820 files. Common Wealth: 820 files.	Physical arrangement of records. Through study of the records. Preparation of finding aids using specific data entry software.	All the three steps.	Lack of modern infrastru- ctural facilities.	Installation of adequate number of modern devices.

5.	Scholar/ User Services	Archival officials, Creating agencies, government & private institutions. Bonafide research scholars. Applicants, seeking Information from electoral roll.	Do	Archival records & library holdings, research rules, guide book & other finding aids, requisition slips, scholars register, requisition register & other official papers to be produced by the scholars such as recommendation letter etc. specific forms to be filled up by the user.		Exploring relevant records.	Health hazards due to handling of age-old records, infested with dust & chemicals used as insect repellent.	Under staff Poor service condition.	Optimum condition in the stack area. Decent reading room with adequate facilities for scholars. Man power.
6.	Library service	Archival officials, Scholars, Publishers & book sellers.	Do	Government publication, books, maps, registers & catalogue, Official papers for fresh acquisitions.		Accession of government publication, selection & purchase of books, scientific arrangement.	Physical arrangement Preparation of thematic catalogue.	Lack of infrastructural facilities & man power.	Appointment of permanent librarian & other library staff. Installation of modern devices.

8.	Public awareness Programme: Exhibition & seminar	Archival officials, distinguished persons from learned institutions & government officials, common visitors, decorators, press.	Do	Archival records, display items, comment/ remarks book.	Exhibitions held with seminars-3	Selection of records, scanning, preparing records for display, preparing captions for displayed records, necessary decorations, preparation of invitation cards & brochures.	Selection & preparation of exhibits.	To popularize & attract commoners other than scholars	Introduction of power point presentation.
9.	Training course on conservation & archives management	Trained archival officers & employees of conservation unit, deputed candidate & fresher	Do	Books on Conservation archives management & lectures prepared by the archival officers.		Lectures, practical training, examination, merit certificates Issued by archives.			Class room and practical training unit.

10.	Central assistance	National archives of India directorates of state archives & applicants for central assistance grant	Both manual & online	From prescribed by NAI, Survey reports & other necessary documents produces by the applicants	Approximate no of survey-50	Processing the application forms, survey of the repositories, survey report, communication with state level screening committee, NAI & concerned applicants	Survey		On line communication
11.	Collaborative program : exhibition & workshop, seminar, lending expertise for setting up of	NAIICHR & different learned institutions	Manual		Organized exhibition in Bethune college, organized lectures & workshop on paper conservation in musicology				

12.	archives in different institution, guidance for dissertation, delivering lectures, conducting research project					dept of Rabindra Bharati University, ongoing project (dictionary of Martyrs), with ICHR, Delhi.					To Improve the existing infrastructure & service condition.	Appointment of an administrative officer & accounts officer.
	Online Administration: Establishment, Salary & accounts management & budget Cell	Govt. Officials & other agencies										

Table-3 : Services

Standards for Digital Preservation:

Standards are nothing but a set of pre-defined and tested rules and guideline formulated by a team of experts and/or specialized groups to ensure an orderly approach to a given activity. Such standards are formulated with a view to bring optimum economy and increase the life span of any product or service, keeping the functional condition and safely requirements in mind. Factors like, lack of cross domain communication, speed of ageing process, etc have made the process of standardization urgent. Standards formulated digital preservation can enhance:

- 1. Interoperability, 2. Interdisciplinary consensus, 3. Use of techniques
- 4 Standard procedure, 5. Platform independent

Standards for Digital Preservation are usually used In four Basic Domains. These Domains Include:

- a) Standards for architecture, b) For document format
- c) For preservation access, d) For interoperability

Proposed Standards for Digital preservation in West Bengal State Archives:

Sl No.	Standard Domains	Standards Available	Remarks
1.	Architecture	i. ISO/DIS 15489 ii. OAIS	Standards for Record Management Architecture
2.	Preservation Content	i. PDF ii. JPEG/JPG	These are document and Image format
3.	Preservation Access	i. Dublin Core ii. ISAD iii. Z39.50	These are metadata standards
4.	Interoperability	i. ODMA-API	Ability of multiple systems with different hardware and software platforms data structure.

Table-4: Proposed Standards for Digital Preservation in West Bengal State Archives

Users Statistics :

The last five year user statistics of West Bengal State Archives are described through the following diagram

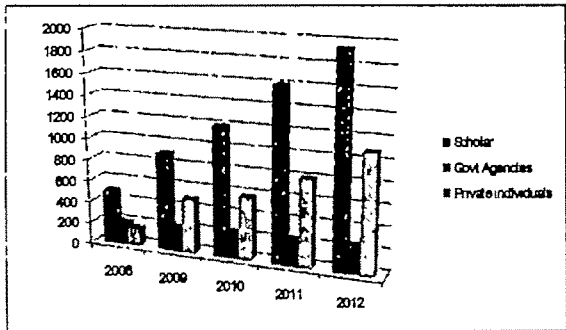


Chart-5 : Last Five Year user Statistics of West Bengal State Archives

Technology used for Digital Preservation:

Sl. No.	Items for Digital Preservation	Scanner	Scanner Description	Software	Storage Format	Storage Media
1.	Glass Records	Special type Tailor made Scanner	This scanner is prepared by former reprographic in-charge, of W.B.S.A. Mr. S.Mukherjee	Data Entry & Retrieval Software (this is also Tailor made software, prepared by a software engineer)	JPEG/ JPG	DVD & External Hard-Disk
2.	Photographic Records	Book Eye-2 (color face up scanner)	A2 Oversize, 400×600 dpi optical resolution, noise reduced image, UV&IR free dimmable lamps, 1GB IT network interface (TCP/IP)	Capturing Software BCS-2	Do	Do
3.	Microfilm Records	Do	Do	Do	Do	Do
4.	Survey Maps	Do	Do	Do	Do	Do
5.	PWD Records	Do	Do	Do	Do	Do
6.	Govt. Files	Do	Do	Do	Do	Do
7.	Political Records	Do	Do	Do	Do	Do
8.	Intelligence Branch Records	Do	Do	Do	Do	Do
9.	History Sheets	Do	Do	Do	Do	Do
10.	Rare Books	Do	Do	Do	Do	Do

Table-5 : Technology used for Digital Preservation

Problems :

- Inadequate man power and infrastructural facilities.
- Lack of technical expertise in collection managers and preservation experts.
- The increasing complexity of digital objects (incorporating text, images, audio, video in various formats) and their increasing software dependence.
- Unstable storage media whose life span is limited (e.g. Diskettes).
- Digitized are not well managed or organized.
- The lack of consideration of long term access requirements while creating digital products.
- The incompetence of the staff with ever changing technology.
- Unavailability of the digitized information in on-line and lack of consortium approach with the other concerned institutions.
- The proposed standards for digital preservation in several areas have not been implemented yet.
- The archives are totally dependent on government departments for collection development.

Conclusion :

Digital Preservation facilitates utmost accessibility search ability usability to both print as well as non print documents and also retains their original look. But beside this there are limitations also. The installation of hardware, software or any other technology, maintaining of them, user training etc, require proper planning, policy making continuous infrastructural as well as financial support. Precautions should also be made on standardization of information storage, otherwise collaboration or consortium with other concerned organization would not be possible. Beside all these factors the digitized information must be preserved and monitoring efforts are required, because the available storage media cannot preserve them for lifelong. These problems impede heavily the works of Digital Preservation, especially in the country like ours. So, continuous research and study should be made to overcome those problems.

Suggestions :

- An overall digitization planning as well as policy is required which must be clear, exact and precise.
- The staff must have the clear cut idea of the technology behind the whole Digital Preservation process.
- Collaborations and co-operations should be established with concerned organizations.
- Proper planning should be made for collection development and collection management, which will ensure and enhance accessibility of documents.
- Digitization of microfilms should be started as soon as possible in West Bengal State Archives.

- Standards in several areas for Digital Preservation should be strictly followed.
- A website for West Bengal State Archives should be launched as soon as possible where the contents and the locations of original documents as well as their accessibility criteria must be given.
- Digital Preservation is a continuous process, so continuous technical and financial support is required.
- Legal Issues should not impede the works of digital preservation
- Continuous training programme is needed for staff, to cope up with ever changing technological challenges.

References

- 1) Nilgam, B.S. & Kataria, S(2008). Digital Libraries. New Delhi: Mahamaya Publishing House
- 2) Satpathy, K.S., Swain, C. & Rautaray, B(2008). Libraries In Digital Environment: Problems and Prospects. New Delhi: Mahamaya Publishing House
- 3) Ramalah, L.S. & Sujatha. G. (2008). Preservation of Library, Archival and Digital Documents: Problems and Perspectives. New Delhi: Ess Ess Publications.
- 4) Gopal, K(2003). Impact of Information Technology Services In Libraries. Delhi: Authors Press

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A LIGHT OF FREEDOM : “SRI RAMKRISHNA DAY STUDENTS’ HOME”

INDRANI DEY

Abstract : A library with extensions.... with all the benefits that we can get in our homes—that special Institution is called 'Sri Ramkrishna Day Students Home'. It has completed long fifty years of its service. The building is as big as a palace and in front of it, there is a beautiful garden with innumerable number of trees. Birds make a pleasant atmosphere by sweet and melodious tunes all day long.

Key Words : Freedom, Sri Ramkrishna Day Students' Home

Introduction:

Sri Ramkrishna Day Students' Home is a Public Library which is mostly used by school, college and university students. It is situated at the heart of North Kolkata-Bagbazar area. Yes, it is a library but more than that it is user's second home because it is arranged with all the opportunities which somebody can get only in his/her home. At 8:00 am in the morning, library opens for the students. They can come to the 'home', do their studies, take their lunch and after that go to their respected schools and colleges. In the evening, they can return to the 'home' again, fulfill their hunger by taking tiffin, complete their studies and then they can go home.

These types of services are hardly available in any library. Students can get sufficient place for reading, writing, studies – with comfortable atmosphere, sufficient numbers of essential books.....whatever is needed by the students.

History and Origin :

That was the tough time; India just got its freedom. The partition has been taken place. Then, there was only one university in West Bengal, the 'University of Calcutta' and numbers of schools and colleges were only in Kolkata. So, students were coming from outside, far villages for completing their higher studies.

In this situation, in 1954, Dr. Gyanchandra Ghosh, the vice-chancellor of University of Calcutta, had made a committee for investigation. The other members of that committee were Prof. K.P. Chatterjee, Dr. P.K. Basu and Sri A. Chatterjee.

Reports told that, at that time at least 80% college students were below poverty line. They were suffering from lack of essential text and reference books, lack of study place and lack of nutrition.

Committee wrote caution lines in the report : *“Disaster lies ahead if the smiling children of middle class homes are allowed to grow into moody suspecting and despairing youth for lack of care, sympathy and guidance.”*

So, committee felt that, after classes students need a silent and charming place with essential number of books, adequate place for reading, writing and healthy, nutritious food in cheap rate.

Then, the Ministry of Central Rehabilitation has sanctioned 50,000 rupees for making a 'day students home' for students who were doing their graduation.

Dr. Bidhan Chandra Roy, the chief minister of West Bengal had taken all the responsibilities to make the dream come true.

Next, on 13th September, 1956 there were two 'home' established by the order of Govt. In the order it was written that.....

**GOVERNMENT OF WEST BENGAL
EDUCATION DEPARTMENT**

Edn. Branch

MEMORANDUM

No. 9675-Edn.1U-35/56

Dated Calcutta the 13th September, 1956

In the light of a survey "Under-graduate Students in Calcutta—How they live and work" carried out at the instance of the Vice-chancellor, Calcutta University and other relevant data available it has been decided to establish a few Day Students' Homes to provide facilities of teaching for the Under-graduate and Intermediate students in Calcutta. Government have accordingly been pleased to appoint a Managing Committee for each of the two Day Students' Homes in Calcutta with the following members :

1. Day Students' Home located at premises No. 65A, Baghbazar Street and 9, Pashupati Bose Lane, Calcutta.
 - i. Shri G.N. Das, the retired Judge of Calcutta High Court – President.
 - ii. Shri M.N.Ghosh, Zaminder – Vice President.
 - iii. Dr. B.R. Roy, M.Sc., D.Phil., Research Scholar – Secretary.
 - iv. Shri S. Paul, Principal of S. A. Jalpuria College, Calcutta. - Member
 - v. Prof. D. Roy, Vice-Principal of Vidyasagar college, Calcutta. - Member
 - vi. Swami Lokeshwarananda of Ramkrishna Mission; Belur Math – Member
 - vii. Superintendent of the Home – Assistant Secretary Ex-officio.
2. Day Students' Home located at premises No. 299 & 301/2, Upper Circular Road, Calcutta.

The Managing Committee will frame rules for the Management of the Homes and submit the same to the Government for approval as early as possible.

Sd/- D.M. Sen
Secretary

After two months, Govt. have decided that 'Three' Day Students' Homes should be started with effect from the 1st September, 1956 in the following premises:

SHERPUR HOUSE

Premises No. 147A, 147B, 147C, Rash Behari Avenue, Calcutta.

TAKI HOUSE

Premises No. 299 & 301/2, Upper Circular Road, Calcutta.

PASHUPATI BOSE'S HOUSE

Premises No. 65A, Baghbazar Street, Calcutta.1, 5, 7/1A, 9, Pashupati Bose Lane, Calcutta.

'Written Order' of the Govt. also said that:

...with a view to providing facilities for home study and other welfare amenities for the needy Undergraduate Students each 'Home' may enroll upto 1000 needy bonafide undergraduates and facilities of the Home will be made available generally after 8 a.m. to 8 p.m. and reading room facilities may be so organized that 250-300 students at a time, may take advantages of those.

Foundation Day:

According to Govt. order, student enrollment procedures have started from 21st February, 1957 after making the required infrastructure at Pashupati Bose's house. So, they celebrate 21st February as their Foundation Day.

What's In a Name?

The Day Students' Home at Baghbazar is enriched with holy dust of the feet of Sri Ramkrishna. So, on 28th August, 1957 Govt. have committed the naming request and given the order to keep the name in memory of Sri Ramkrishna.

Historical Importance:

Kaviguru Rabindranath Tagore has announced a protest meeting on the 'Partition of Bengal' in this library building. On that day, he has given a speech and sang a patriotic song. The library is also enriched with the holy dust of the feet of Sri Ramkrishna and Swami Vivekananda.

Collection:

The library has a huge collection of text and reference books on all subjects of regular academic higher secondary and degree courses. Right now the collection is more than 30,785 and it is increasing! The collection covered text and reference books on Philosophy, Psychology, Linguistics, Literature, History, Sociology, Political Science, Law, Economics, Tax, Math, Physics, Chemistry, Computer Science and Environmental Science.

Working Hours:

From Monday to Friday the library is remained open from 8 a.m. to 8 p.m. On Saturdays the timing is from 8 a.m. to 3 p.m. Library is closed on Sundays.

Membership Procedure:

Students who want to be the member of the library should fill up a 'Form'. They have to submit the form with xerox copies of their mark sheets and two copies of photographs. After that, they will get their 'Membership Card' with validity of one year. Every year they have to renew the card.

Membership charges:

Price of the Form:	Rs. 5.00
Welfare Fund:	Rs. 10.00
Saraswati Puja:	Rs. 20.00
All Total:	Rs. 35.00
For Renewal:	Rs. 30.00

About the Users:

Here, the users are mainly students of Higher Secondary, Under-graduate and Post-graduate levels. Right now, there are almost 1000 students who come regularly from Kolkata, Howrah, North and South 24 Parganas to use the library. Enrollment of new members is near about 800 to 1000 every year.

Lay out of different sections:

- a) Old/Rare Books Section—Library has more than 6000 rare books in its collection. It is kept in separate rooms in lock and key. User should take special permission to use those books.
- b) Circulation Section—Students can issue 3 books at a time preferably on the same subject. They have to read for at least 1 hour.
- c) Access System—Books are arranged according to their subjects and classified by DDC classification system. Library is fully Open Accessed.
- d) Reading Room Section—There are 18 no. of rooms for reading with separate facilities for boys and girls. Each room has sufficient no. of tables and chairs, lights and fans with proper ventilation.
- e) Reference Section—There are 6 stack rooms in the library. All stack rooms are huge in size. The no. of stacks are more than 300.
- f) Newspaper and Magazine Section—Library is the subscriber of newspapers like Aajkaal, Employment News, Karmakshetra and Desh magazine.

New Arrivals:

Books are purchased according to the students' requisition. Then, the list of new books is put up on Display Board to aware them.

Stock Verification:

In every year, physical stock verification of the total collection has been taken by library staffs. It takes at least 5-6 days to complete the whole process. Issue-return system is totally stopped during that period.

Services:

- a) Reprography Service—Students can take the facility of xerox from library books. They have to fill up the 'xerox coupon' and take the 'Gate Pass' from the attendant. For xerox, they should take the book to the xerox centre outside of the library.
- b) Canteen Service—After stack room this place is the main attraction of all

students. Lunch and Tiffin are served by the canteen. Menu is changed in every week.

Usually in lunch, students get rice, pulses, fry, curry, egg, fish and chicken/ mutton (once in a month) for eating. It is charged rupees 4/- only.

For tiffin, they get luchi, chapatti, paratha, bread, egg/chicken curry, tarka, chatni, sweets and sometimes chop, cutlet, samosa, nimki, chowmin, egg roll, moglai paratha, nanpuri, chana batora etc. It is charged rupees 2/- only.

There are only 3 staffs who work in the canteen.

Preservation of books :

Trained staffs from Pest Control Centre come once in a year for spraying pesticide in the stack rooms. It is usually done in puja holidays. Naphthalene is used also.

Budget:

There is not any fixed amount. On behalf of the Government grant books are purchased time to time.

Staffs:

Right now, there are only 10 no. of staffs who run the whole library. There is a Managing Committee who takes all the important decisions.

Problems to be Solved:

Nowadays, the library is suffering from lack of trained staffs. For a long year there was not any single recruitment. Library building is very old. It badly needs to get repaired soon.

Future Dreams:

The Superintendent of the library, Mrs. Dipali Das told that she wants to make a digital record of the total collection with help of library software. It is not started yet.

Conclusion:

The library has completed more than 50 years of its service. It still serves for the needy students of schools and colleges. The managing committee and staffs of the library are always eager to help them. It is their promise that as many problems come in the way, they will serve with devotion, respect and responsibility.

PRESERVATION TECHNIQUES AND RELATED PROBLEMS IN FILM LIBRARIES IN KOLKATA: A STUDY

NILOFER NISHAT

Abstract : The paper tries to find out proper film libraries in Kolkata. In this context it is important to know how the film materials are preserved and what problems are faced by the librarians and library professionals to handle them. Indian people are very much crazy about commercial films but there is no more works on the non-commercial aspects of the film in this country. It also focuses on the films related works like film reviews, bulletins and other add related materials. Through the works it creates a great consciousness about not only watching but also preserving films in the minds of the people.

Keywords : Film, Film Library, Preservation Technique.

Introduction:

The films create a visual long lasting effect on the minds of the people. Now people consider film as a great media of communication. It is not only being used for entertaining purpose but also for conveying the thought or message of the directors to the people. Today films are made on biographies, social problems, political aspects, underworld events, particular incidents, intellectual aspects, about different animals and various matters. So, the films today do not follow any boundary to stop it up to a particular pace. In this era in India, we have at least a percentage of audience to watch any type of film.

In spite of so much craze about film and stars we do not see that there is any library which we can be called a film library in a true sense in city Kolkata. But the numbers of libraries in Science and Technology, Humanities, Social Sciences and in other disciplines are growing day by day. There should be proper archiving policy to preserve the films. People should get consciousness about film libraries, information centers and archives in this country and in this city.

Importance: The paper shows the present state of the film libraries in Kolkata now. It also reflects their preservation and collection policy. It brings into sight the problems related to the preservation of the film materials.

Objectives: The objectives of the paper are as follows:

1. To find out proper film libraries or in a true sense film libraries in Kolkata.
2. To discover the problems regarding preservation and conservation of the film materials in the libraries.

Scope and coverage: The libraries taken for the survey for this purpose are as follows:

1. Chalachchitra Shatabarsha Bhavan, 72 Deshpran Shashmal Road, Kolkata - 700033.
2. Ritwik Memorial Library at Nandan, 1/1, A.J.C. Bose Road, Kolkata-700020.
3. Indian National Library, Plot No.1A, Belvedere Road, Alipore, Kolkata, West Bengal, 700027.

4. Satyajit Ray Film and Television Institute (SRFTI), EM Bypass Road, P.O. Panchasayar, Kolkata-700094.
5. Goethe Institute Max Muller Bhavan Library, 8 Ballygunj Circular Road, Kolkata-700019.
6. Gorky Sadan Library, 3 Gorky Terrace, Kolkata-700017.
7. Cine Central Library, 2, Chowringhee Road, Kolkata-700013.
8. The American Library, 38-A, J.L. Nehru Road, Kolkata-700071.
9. British Council, 16 Camac Street, Kolkata-700017.
10. Calcutta University, Main Campus Library, 87/1, College Street, Kolkata, WB. Kolkata-700073.

Out of the above libraries proper response was got from all of them only except SRFTI. Chalachchitra Shatabarsha Bhavan is not at all a library, it is a West Bengal Government initiative to preserve the films.

Preservation of the film materials: Master copy of a film should be stored and used for striking DUPE negatives. For the preservation of the negatives the temperature should be -4 degree centigrade and relative humidity should be 15%. Black-and-white acetate stock should be stored at 13 degree centigrade and at 55% relative humidity. The acetate matter's combustive nature make special fire precautions essential [1].

Analysis of data:

Name of the library	Books on films	CD	DVD	VCD	ACD	LD	VHS cassetts	Umatic	Positive	Negative
Chalachchitra Shatabarsha Bhavan	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
SRFTI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Max Muller Bhavan	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Gorky Sadan	Yes	No	No	No	No	No	No	No	No	No
Cine Central	Yes	No	No	No	No	No	No	No	No	No
American Library	Yes	Yes	Yes	Yes	No	No	No	No	No	No
British Council	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Ritwik Memorial Library	Yes	No	No	No	No	No	No	No	No	No
Calcutta University	Yes	No	No	No	No	No	No	No	No	No
Indian National Library	Yes	No	No	No	No	No	No	No	No	No

Table of the Collection of the Libraries

From the above table it is clear that Chclchchitra Shatabarsha Bhavan has maximum collection of film materials and SRFTI too has a wide collection of the same. But other libraries like Max Muller Bhavan, American Library and British Council there are only CDs and DVDs in collection. Other libraries have only books on films in their collection.

Findings: After the survey of all the libraries it was found that all the libraries do not follow the same rules to collect and maintain the film materials. There are different types of ways of collecting and preserving the materials. Some points are given here:

- 1. Collection of Film Materials in the Concerned Libraries :** Most of the libraries are having books on films in their collection but very few have film materials in proper sense. A brief account of them are given here:
 - I. Chalachchitra Shatabarsha Bhavan :** It has a huge collection of Bengali, Hindi, Documentary, Short featured films up-to-dated from the year 1947. Here, films are contained in Positives, Negatives, Umatics, CDs, DVDs and VHS Cassettes etc. There is also a collection of short and documentary Russian and Indian films. It also contained one silent film i.e. Raja Harishchandra but now the film is destroyed.
 - II. SRFTI :** There are two library and one archive in this campus. There are 1149 DVDs, 578 ACDs, 283 VCDs, 37 LDs, 630 VHS Cassettes and many books, dictionaries, encyclopedias and other reference tools in the whole collection. The library also has a collection of student's diploma film projects, classics, short films documentaries and feature films in audio-visual multimedia resources. The film library in SRFTI contains 400 foreign feature films and 914 short and documentary films. The regional office of National Film Archives of India here, has a significant collection of 71 classics.
 - III. Max Muller Bhavan :** It has a collection of contemporary German movies. The films are mainly contained in CDs, DVDs and VCDs.
 - IV. American Library :** It has a huge collection of American movies. All the films are contained mainly in CDs, DVDs and VCDs.
 - v. British Council :** The collection mainly focuses on British films in CDs and DVDs.
 - vi. Cine Central Library :** Now-a- days the library is kept closed. There is a collection of books on films but it does not contain any film CD or DVD or tapes or cassettes or any other film related materials.
 - vii. Gorky Sadan :** Some printed materials like bound volumes of journals and books about film are there in the collection.
 - viii. Ritwik Memorial Library :** There are many books on films and photography but no collection of CDs or DVDs.
 - ix. Calcutta University library:** It has a few number of books on films but it does not contain any film CDs or DVDs etc.
 - x. Indian National Library:** It has a very few collection of books on films but it does not contain any film.

2. Preservation of the Materials in the Concerned Libraries : As it has been said earlier that proper response was not received by the SRFTI so only the preservation systems of other libraries will be discussed here.

- The libraries containing only books on films do not have any special preservation system.
- Other libraries like Max Muller Bhavan, American Library and British Council keep the CDs or DVDs in Air Conditioned atmosphere of 16-20 degree centigrade.
- The Chalachchitra Shatabarsha Bhavan takes special care of all the film material. It maintains 2-8 degree centigrade to preserve colour negatives, 17-22 degree centigrade to preserve black and white negatives and in both cases dehumidity is maintained. CDs and DVDs are kept in normal temperature in AC and every day the films are checked whether they are ok.

3. Preservation Policy : No library follow any particular preservation policy to preserve the materials.

4. Cataloguing and Classification of the materials : Only the response of the Chalachchitra Shatabarsha Bhavan has been got in this point which includes that the materials are maintained rack number wise and there is not any cataloguing code or classification scheme is followed.

5. Users demand : Users mainly demand for documentary films most of the time. But in the cultural centers like American Library, British Council and Max Muller Bhavan users mainly demand for the movies of the concerned language. The film students demand for the student films, short featured etc.

6. Problems In libraries regarding preservation and conservation of the film materials : There are several problems in relation to the maintenance of the film materials such as:

- a) People have a consciousness about print media that it should be kept safely and should be preserved for further use but there is no consciousness in the minds of people about visual media. If there is, it is very poor in number.
- b) Film tapes and negatives are very much ephemeral in nature and so very much problematic to handle.
- c) Many films do not have existence in this world now. So, it is a great problem to recover those e.g. Mrinal Sen's "Punashcha" and "Pratinidhi".
- d) There is not any archiving policy for the films in this country.
- e) Government sponsors are not properly utilized in this matter.
- f) The CDs and DVDs have a problem. If these are scratched then it is very difficult to recover the content, almost it is impossible but if any portion of the negatives is destroyed then that particular portion can be cut and the other parts of the film can be recovered.

Suggestions :

On the basis of the above findings the following suggestions are provided.

1. **Film Awareness :** We should not only use film as a part of entertainment but also as a part of an asset of life. Awareness should be created in the minds of people for the film preservation in our country.
2. **National Library for Film :** A National Library of Films should be made with full Governmental support to quench thirst of the film students and people who are interested in film. There should be proper policies and rules implemented at the time of film libraries like Delivery of Books Act for National Library etc.
3. **Governmental Support :** Government should take initiatives to preserve film and film related materials like film reviews, bulletins and other add related materials for the sake of public and generation after generation.
4. **Silent Films Preservation :** In 1910-1930 about 1300 silent films were made in India. There should be a separate collection of these movies.
5. **Students Films or Short Fiction Films Collection :** The student films are not released so these require special care to preserve. All the student films from all the film institutes in India and from foreign countries should be preserved for the future film students.
6. **Documentary Film Awareness :** Like the student films, Documentaries are also most of the time not released. So, it is the sole responsibility of the Government to preserve them for the people in various disciplines to know about the topics.
7. **Certificate and Diploma Films :** There should be a collection of Certificate and Diploma films for the benefit of the film students.
8. **Film related materials :** The film related writings such as film reviews, articles on film, film bulletins, add related materials like posters, photographs etc. should be preserved for the benefit of the film students and for the people interested in films.
9. **Film Tapes and Disks :** Now-a-days all the film containers are mainly CDs or DVDs but old film mediums like film tapes, film prints should be preserved for the future generation.
10. **Collection of Banned Films:** There is a proverb that "Today's trash may be tomorrow's treasure". So, all the banned films should be collected differently as the next generation can research on them of why the films were made banned once.

Conclusion :

Now it can be concluded that, in this era a public film library is a basic need for the students of film study and other people interested in film. The people of our country will be more and more informative about film if they get every possible resources to them. So, the government should come forward to build up successfully a public film library in this city. The film students and the librarians should show their interest in this initiative.

Acknowledgements :

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Reference :

1. Bawden, Liz-Anne (1976). The Oxford Companion to Film.

DIMENSIONS OF LIBRARY SERVICES IN DIFFERENT PERSPECTIVES : A THEORETICAL DISCUSSION

PARIKSHIT MONDAL

Abstract: Invention of new technology helps the libraries and information centers to investigate and implement the changes required in the existing systems. This paper deals with principles and practices of change management in the context of library and information services. Traces the phases of changes, types of changes, and areas in which the changes are to be implemented. Also discusses the measures for detecting the problem of an existing system and how to overcome the same.

Keywords: Change management, Process of change, Library and information services

1 Introduction

Making wise choices at the correct time is a simple technique of management. Change management refers to effective management of new methods and systems in an ongoing organization. It is not a singular concept rather it includes a set of best practices and experiences, which are used to handle both internal as well as external changes. Change management is both an area of professional practice as well as body of knowledge. In the context of library and information services, implications of change are now greater in extent than ever before. In libraries and other knowledge based organizations the present information explosion and the consequent knowledge revolution have unleashed a gigantic wave of change. The changes that libraries and information services are facing today are unpredictable and unquantifiable. The political, economic, social and technological climates worldwide have created an atmosphere of uncertainty in which it is difficult to anticipate the future. It is difficult to predict the form of challenges that the libraries and information centers are going to face. Thus in case of library and information centers, it is not just a matter of managing change but a question of proper organization so as to cope with any uncertainty that comes across.

2 Definition

Change management is a structured approach to shifting/transitioning individuals, teams, and organizations from a current state to a desired future state. It is an organizational process aimed at empowering employees to accept and embrace changes in their current business environment (Filicetti, 2007).

Change management is the utilization of basic structures and tools to control any organizational change effort. Change management's goal is to minimize the change impacts on workers and avoid distractions (Kotter, 2011).

3 Types of changes in an organization

Change can be better managed if we are able to categorize them. It can be broadly categorized as follows:

- **Provoked by pressure or necessity:** This type of change occurs when some pressure or force comes. Pressure may come from different angles like political, grouping, lobby and others.

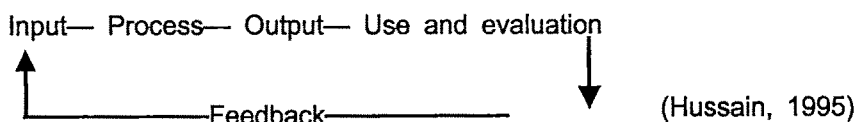
- **Induced by gentle persuasion rather than force:** Persuasion is better than force. Imagination has better result. It inculcates to the existing staff by persuasion.
- **Enforced change:** By hook or by crook change must be adopted. If there is no other alternative change should be enforced.
- **Motivation by example and evidences:** Put references and examples of other institutions for motivating the staff and users. It is evident that top competitions are providing high motivation to adopt the change.
- **Designed according to individual needs and requirements:** Changes are done according to individual needs and requirements. Individual's needs and requirements are different. New system must be designed according to individual needs.
- **Product and service changes:** These types of changes pertain to the product or service output of an organization. New products are designed to increase or to develop new markets or clients.
- **Strategy and structure changes:** These changes include changes in organization structure, strategic management policies, reward systems, labor relations, management information systems, accounting and budgeting systems, etc.
- **Culture change/People change:** This type of change refers to changes in value, attitudes, expectations, belief, abilities, and behavior of human resource.
- **Technology changes:** Technological changes in an organization's include changes in production process, its knowledge and skill base that involve the techniques for making products or services more efficient.

4 What, Why and How change in an Organization

It becomes easier when problems are formulated in terms of "what, why and how" questions. The formulation depends on where in the organization the person posing the question or formulating the problem in situation, and where the organization is situated in its own life cycle (Nickols, 2010).

4.1 What can be changed in an Organization?

Library is a system. It has some components like input, process, output, manpower, database and hardware/software. Change can be done in any steps of the system when ever it requires. A system is a group of interrelated and often interchanging parts that together constitute a whole. System may be used to describe naturally occurring groups of objects or phenomena. For example library as system that the output of the system should be evaluated to ensure the processing objectives are met. If this is not so and reprocessing is required, then information for changing the input needed for reprocessing is provided as feedback. System can be illustrated by the following figure:



4.1.1 Different areas of Information centers that require change

Library and information centers have different areas of work. Each and every area there have some distinguish feature of work. Various persons and techniques are engaged to perform the works. When different sections of the library are performing well then the success of the library can be achieved. Generally these are the sections or areas where change can be implementing:

- Acquisition
- Cataloguing
- Circulation
- OPAC
- Serial control
- Administration
- Reference

4.2 Why change in an organization

Change is a natural process of human life, since people constitute an organization, it cannot remain isolated from the effect of changes. Usually in any organization change is required because of the pressure of two kinds of forces or factors: external and internal (Prasad, 1999). The following are the reasons for bringing change in an organization:

- **More and frequent changes:** Change is occurring at an incredible pace in organizations today. The sheer quantity of changes is increasing, and changes are happening more frequently and faster than ever before. With the happening of such large volume of changes, organizations need a better and more structured way to manage the individuals in an organization impacted by all of such changes.
- **Value system of empowerment:** Old values of control and predictability have been replaced by new values to push decision making, authority and responsibility down into the organization. While this shift has delivered many benefits, it has also made top down changes more difficult and increased the resistance they face.
- **Competitive advantage:** Many sources of competitive advantage have eroded as information moves more quickly and across the globe in seconds. Strong change management competencies within an organization are a key source of competitive advantage, (Prasad, 1999).
- **Restructuring:** It is very common practice that an organization undergoes some form of restructuring during its life cycle. This could involve mergers, acquisitions, new services, new technology, new branch, new community or user, etc.
- **Technology:** Invention of technology obsoletes the old practice. New generation occupies the market and leaves behind the existing one. New hardware and software is used and its optimum advantages welcome the newer (Prasad, 1999).

- **Priority:** The organization is giving more emphasis or priority to the new one though the old one remains valid. Priority is to be given which
- **New partners:** The benefits of partnership may lead the change. Organizations are responding to the rapidly changing market place by forming new partnerships and alliances. New channels are becoming available through relationships, e.g. using Interlibrary loan, resource sharing, cooperative management.
- **Global standards:** To maintain the global standard instead of old standard, the institution adopts the new and global standard that has portability and user friendliness.
- **Effect of other Initiatives:** Initiatives are often taken by any worker according to the organizational needs to revise the existing system. These initiatives inspire the intuitiveness and give rewards to the initiator and espouse the change. These initiatives affect the organization and its outside also (Prasad, 1999; Wallace, 2007).

4.2.1 Identify the problems of existing system

The ongoing business is running satisfactorily. Sometimes the existing project has some problems that can inaccuracy result or stumpy quality and low quantity result. The loopholes of the existing system are to be sought out and take corrective measures. Periodic and interval basis correction and checking out the problems are a routine work of the institution. At first we have to chalk out the problems of existing system. Some problems in the library and information services are given below:

- **Document:** Library has different types of document like print and non print materials. Due to modern techniques the demand of online and electronic materials are increasing day by day. The demands are shifting from traditional to electronic version. It is a problem that due to shortage of fund and manpower the whole document may not convert in to the digital format within short time. The low used documents also take place burden to preserve in the library.
- **Storage:** Library is a growing organism, so it grows horizontal and vertical of collection, building and manpower. The traditional materials are not properly stored and preserved due to lack of infrastructure. The space and technology is not up to the mark.
- **Processing/ Retrieval:** The technical works are following the traditional methods, like old version of Classification, Cataloguing, Indexing, abstracting, etc. these are not up to the mark.
- **Economy:** Cost benefit analysis is the best method for economy. Law of parsimony is achieved if we follow the effective cost. Least cost is favorable by all if the service is parallel to the other.
- **HRD:** Trained and fast manpower is the fittest for the job. Lazy and unhealthy staff to be trained for better service. Manpower development is the key element of change management.

- **Adaptability:** Any change in an organization may arise some resistance to adopt the new one. Old peoples say that old is gold. They are not well come the new one. But the new invention has tendency to adopt the new one.
- **Equipment:** The old equipments have some problems. It may be out dated and hazardous that affects the existing system. In these circumstances the obsolete equipments are to be identified and reject to grab the new one.
- **Time:** The existing system is taking more time for carrying the activities. If It is found, then analyze where the time is killing. After identifying the causes of time killing it has to be changed the old one and adopt the new one, which takes less time.
- **Accessibility:** The existing system has problem to access the document. The retrieval function is not properly executed. So the accessibility is very poor. Then search for new search technique that has good retrieval function.
- **Services:** Library and information centers provide different types of services every day. Due to information explosion and technological advancement the old services are back dated. It is to be updated and rigorous change is indispensable.
- **Working environment:** Environment of work is the key factor of success. Healthy environment creates more output. Unhealthy environment shrink the services.
- **Pressures or forces:** Different pressures like political, user need, user demand and competitions to survive there have In need to change the existing situation.
- **Purchase:** Libraries are facing some problems to purchase the documents and equipments. Problems must be minimized. Acquisition system must be simplified and be well organized if there have persist any problem.

4.3 How change In an Organization

Change is not easy task. When we know change could be better and we get a certain comfort from a familiar setting. Change is most likely to succeed in this smooth environmental situation and when managers follow a well-thought-out path to implement it.

4.3.1 Change Process adopted In an Organization

The change management process is the sequence of steps or activities that a change management team or project leader would follow to apply change management to a project or change. These are the following steps in a change process:

- Problem encounter
- Analyze the problem
- Evaluate change
- Change the plan
- Implement the change
- Review and close change (Prasad, 1999; Weerd, 2006).

4.3.2 How to Handle the change In an Organization

How can change put into action? These are the basic issues of a change management. Although there are some resistance till the new project be implemented if it is advantageous. Good manager can easily manage the resistance and leads to the new method. The basic techniques of handling the changes are as follows:

- **Motivation:** Motivation is the factor to inspire the peoples to do the change and to accept the new one. To motivate the peoples, is an art of management. By giving some rewards peoples can be motivated to adopt the change.
- **Example of other institution:** The examples of changes acquired of the other organizations and the benefits of those changes are to be illustrated. The examples instigate to grab the change.
- **Literature search:** There must be reviewed various related literature before enact the changes. The literature reveal the pros and cons of the existing system and encourage to revising the work.
- **Pressure:** Some time pressure may be given to adopt the new one. It is also a practice of the management. But it should not be the regular practice to do so because it has negative effects.
- **Perquisites:** Perquisite is the best practice. Some extra benefits or perquisites may be given to the existing staff to do some new work. Perquisites enhance the productivity or qualitative work.
- **Workshop, Seminar, Training:** Workshop, seminar, training camp may be arranged for the existing staff to perform the better result. These types of seminar, workshop, and training encourage the people to learn and to adopt the latest change.
- **New manpower or trained manpower:** Some time it requires new and trained manpower to run the system instead of old staff. New manpower also inspires the existing staff.
- **High light the merits of new system and demerit of the old one:** The illustrations and merits of the new system may be motivated the existing staff to accept the new one instead of the old one.
- **Power or responsibility:** Delegation is also the key factor of success. Responsibility is to be given to the subordinate. Some time delegation provides more effective result.
- **Fear of retrenchment:** Fear of retrenchment is also the factor to assist the change. But it is not the regular practice to do so because it has negative effects.
- **Trial and Error (test):** The new method must be tested before implementation. New method may have some mistakes or hazards. If the method is tested and the result is satisfactory then it can be given green signal to go ahead. Otherwise it would be stopped or be re-modified the method. The first few days must be kept for test the result of the new

proposal. The old and new method may run simultaneously and compare the result which one is satisfactory and less time consuming.

- **Feedback:** Each and every system there must be a feed back mechanism. The feed back mechanism replies that the result of new method is easier than the old one or there are some difficulties. If any difficulties, defects, low qualities and hazards are found, it can be re-adjusted or modified and it follows cyclic method till good results found. Then implement the new one and close the change.

5 Conclusions

Everything is changeable in the era of globalization. It is not only a fight to adopt a present situation but also fight for existence. It is not possible to change a system in one fine morning. For this purpose we need to undertake a proper planning, implementation and managing the procedure tactfully. Change management is not only change a system or procedure it is also a change of environment. Library is a system and also a growing organism, from that point of view change management is more effective and needed for this field. From user's point of view library should be more user-friendly, so that uses of modern technology are inevitable. But that does not mean modern technology will be given space entirely uprooting the traditional system. Development and change do not mean abolition of the traditional system. It means a good, healthy and better environment for whole system. Young generations always tell about technology for mankind and have to change the system or process by using modern technology. Some traditional system is more scientific than new. But some traditional system is too lengthy and takes more time. Introduction of new technology, library and information centers get enough scope to investigate what to change, why to change and how to change in its existing system. The change management is only procedure to solve those kinds of problem.

References

- Fillcett, John (August 20, 2007). Project Management Dictionary. Retrieved 16 November 2009, from <http://www.pmhut.com/pmo-and-project-management-dictionary>.
- Hussain, K.M. & Hussain, D, (1995). Information systems: Analysis design and implementation. New Delhi: Tata McGraw Hill
- Kotter, J. (2011). Change Management vs. Change Leadership—What's the Difference? Forbes online. Retrieved 12/21/11, from <http://www.forbes.com/sites/johnkotter/2011/07/12/change-management-vs-change-leadership-whats-the-difference/>
- Nickols, F. (2010). Change Management 101: A Primer. Retrieved June 17, 2011, from <http://www.nickols.us/change.pdf>.
- Prasad, L M. (1999). Principles and practice of management. (5th ed.). New Delhi: Sultan Chand.
- Wallace, Simon (2007). Scope & change control: why, what, how? Retrieved Feb 22, 2012, from <https://www.epmbook.com/scope.htm>
- Weerd, I. van de (2006). *Meta-modeling Technique: Draft for the course Method Engineering 05/06*. Retrieved Feb 22, 2012, from [http://en.wikipedia.org/wiki/Change_management_\(engineering\)](http://en.wikipedia.org/wiki/Change_management_(engineering)).

STUDY OF RELATIONSHIP BETWEEN ROUTINENESS AND JOB SATISFACTION OF THE LIBRARY EMPLOYEES

DIBYENDU PAUL AND BAISHAKHI DAS

Abstract : This study aims to explore the levels of routineness and job satisfaction of the library employees and the relationship between these two factors. A survey has been conducted in the libraries of the University of Calcutta. The survey was carried out with the help of scales of job satisfaction and routineness. It is revealed that there are significant distinctions in the levels of job satisfaction according to gender, age and service period. Also there are significant divergences in routineness between male and female employees under study. It is also found that both job satisfaction and routineness are positively correlated.

Keywords : Job satisfaction, Routineness, Library Employees

1. Introduction

Besides other factors the employee's job satisfaction depends on routineness or working conditions of the organization. The study of relationship of routineness of the employees of any organization and their job satisfaction is important in the course of rendering services. This is most important especially for the service oriented organization. As a service oriented organisation like library and information centers the routineness factor is very much important to be considered.

Job satisfaction means how people feel about their job and different aspects of their job. It leads whether the employees are happy or unhappy working with a particular organization. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their job. There are basic and universal human needs and expectations regarding one's job. If one can achieve his/her expectations or that basic needs working in that particular organization then it can be said that he/she is more or less satisfied regarding his/her job and will be happy.

Routineness, on the other hand, is the working condition or job environment of any organization of an employee. Job satisfaction depends on routines. Job satisfaction is defined as an employee's affective response to his job environment. It is a state of mind of an employee how much he/she feels comfortable working in the organization. The state of mind of an employee affects his/her performance. It can be said that a happy worker is a productive worker or that a productive worker is a happy worker and has appealing face validity.

2. Objectives of the Study

This study aims to explore the relationship of employees' job satisfaction and routineness in the library as workplace. The broad objectives of this study are as follows:

- To understand the level of job satisfaction of the employees of LIS
- To understand the level of routineness or working conditions of the employees of LIS

- To find out the impact of routines of the employees of LIS on their level of job satisfactions

3. Related Literature

Lynch and Verdin (1987) suggested that longer the period an employee continues a particular job comparatively adapts more to the work situation than the employee works a shorter period. So, the level of satisfaction of the 'longer employee' is high. This level of satisfaction depends on the scope and the works-environment of the particular job.

Generally the scope of the jobs in the developed countries are comparatively flexible than the countries like India. If any employee is dissatisfied with his/her job and cannot adapt with particular works-environment, he or she can opt to leave the job in any developed country, which is limited in our situation. Here an employee cannot leave the job due to any dissatisfaction with his/her job because of limited scope of alternative job. There may be exceptions in regard to longer the tenure higher the job satisfaction phenomenon. Sometimes 'longer employee' feel bored to do the same type or level of job. Stead and Scamell (Lynch and Verdin, 1983) suggested that role ambiguity and role conflicts are equally related to job satisfaction with the works of the librarians.

Assertiveness training for low-assertive people may increase their satisfaction with work, but according to Stead and Scamell (1981) assertiveness training may lead to a decrease in satisfaction with co-workers for older, more experienced employees and a decrease in satisfaction with supervision for less experienced employees. According to them there is significant positive relation, between satisfaction and assertiveness, exists for various groups of ages of the people.

According to Stead and Scamell (1980), there is no difference emerged among the male or female respondents on satisfaction. D'Elia (1979) also suggested that there are significantly no differences between male and female librarians in the degree of job satisfaction. But exceptions are also appeared in literature. In another results they suggest that school librarians are more satisfied than do other librarians and technical services librarians in academic libraries tend to greater satisfaction than do other librarians.

Plate and Stone (1974) investigated that institution's policy and administration; supervision and interpersonal relationships were the three major dissatisfying factors, achievement and recognition.

According to D'Elia (1979), routineness is employee reactions to organizational structure, job classification, personnel policies, professional milieu, social environment, working conditions and other organizational characteristics are one form of feedback to the administration pertaining to its performances. Whereas the Vaughn and Dunn (1974) study reveals that routines or working condition does not measure an employee's job satisfaction but rather measure an employee's perception of the presence or absence of certain characteristics in the job environment.

4. Methodology

A survey has been conducted among 50 library staff of the University of Calcutta during the month of June-July 2013. The survey instruments were comprised of scales of job satisfaction and working condition of the employees. There were 49 statements, categorized separately under different levels of employees' job satisfactions and 25 questions regarding service routineness.

The level of employees' job satisfactions has measured by scaling four related questions on job satisfaction. The level of routines or working conditions, also have been measured by scaling twenty related statements.

The respondents have given a scales consisting of points 0 to 10 along with each statement to indicate the extent of their opinion on different aspects. In the job satisfaction scales the indication of point 0 means the respondent is not at all satisfied with particular aspect of his or her job and 10 means the respondent is highly satisfied with the same aspect. In routineness scale 0 indicates completely disagreement that means the working conditions are very poor and 10 indicates completely agreement that means the working conditions are acceptable or much better.

The full time employees assigned the functions of acquisition, cataloguing, circulation, reference and membership sections were asked to put their opinions on the scales given along with each research instruments mentioned above. The significant differences between gender, age and the year of services of the respondents have been tested by means of measuring central tendency, dispersions and Co-efficient correlation of the variables.

5. Analysis and Findings

5.1 Job Satisfaction

There are four rankings in relation to the statements to measure the level of job satisfaction. We have categorized the level of job satisfaction of the library employees into four categories. The categories of the job satisfaction of the employees with scorings are given below

- Highly Satisfied 31-40 points
- Moderately Satisfied 21-30 points
- Slightly Satisfied 11-20 points
- Not Satisfied 00-10 points

It is found that the satisfaction levels of the employees have varied widely. The percentage of highly satisfied employees is 45. That supports that the working conditions in their workplace are acceptable to them and they considered their workplace much convenient to work. They are highly motivated and devotedly engaged in their work, with confidence that their contributions to goals are significant and unique.

The moderately satisfied respondents found are 35%. The working conditions, according to them are acceptable to them. There option go towards an effective team functioning.

Whereas the percentage of less satisfied employees under this survey is

not so high (only 15%) compared to the other two categories mentioned above. They consider their working conditions between poor and just acceptable. Their job priorities and methods are likely to be assigned by others and they may feel completely dispensable.

But only 5% of the respondents are not satisfied at all with their current job. According to them their job priorities and methods are very much determined by their superior and they are not at all motivated. They consider their working conditions very poor.

5.2 Routineness

There are twenty questions to measure the level of routines or working condition of the respondents. The scores against these twenty questions are cumulated to get the total score against the levels of routineness. We have grouped the level of routineness of the library employees under study into five categories as follows:

- Extremely Acceptable Scored 161-200 points
- Grossly Acceptable Scored 121-160 points
- Acceptable Scored 081-120 points
- Partially Acceptable Scored 041-080 points
- Not at all Acceptable Scored 000-041 points

On an average the employees under study appeared to have grossly accepted their working condition as the average score of all respondents in this respect is 124 points.

We have found that the routineness levels of the employees vary widely. 35% of them have considered their working condition extremely acceptable that means they feel they are very much secured in their workplace as far as the service condition and environments are concerned. According to them the interpersonal climate, pay conditions, promotion conditions are very much favorable for them. They are likely to be a part of a highly effective and cohesive team and have close professional friendships within the work place.

25% of the respondents have considered their working condition grossly acceptable. They also feel very secure and their pay scales and promotion opportunities are hopeful for them. To them, their job is rewarding and their contributions to goals are significant. They enjoy a high degree of 'camaraderie' within the team. They may want to explore strengthening unique areas of expertise to increase their influence on work outcomes.

25% of them have considered their working condition acceptable. They may have a sense that could be replaced easily with someone else. They may want to consider strengthening unique areas of expertise to increase their influence on work outcomes.

10% of the respondents have partially accepted their present working conditions well. That means their working conditions are probably between poor and just acceptable.

Only 5% of the respondents have not feel acceptable their working conditions. They are counting the days to better times or retirement.

5.3 Job satisfaction and Routineness

In this study the routineness levels are correlated to the levels of job satisfaction. Routineness does not directly measures job satisfaction but measures the certain characteristics which make the employees satisfied with their job environment. The characteristics are the work itself, the supervisory climate, the interpersonal climate, the pay conditions and promotion opportunities, security, social, esteem, autonomy and self actualization. These characteristics are very much related to job satisfaction. Routineness is to describe the characteristics of employee's job environment, not to reveal his feelings about his or her job. An analysis of job satisfaction within an organization provides an important diagnostic assessment of the health of that organization. In our study we have done correlations between job satisfaction and routineness ($r = 0.56$) which shows that job satisfaction and routineness are positively and significantly correlated with each other.

6. Hypothesis and Testing

The following hypotheses are established in this investigation:

1. There is no significant difference in the level of job satisfactions of the employees according to their gender.
2. There is no significant difference in the level of job satisfaction according to the age group of the employees.
3. The level of job satisfaction increases with the length of services of the employees
4. There is no significant difference in routines scores according to the gender of the employees
5. Routineness and the level job of satisfaction are highly correlated.

The hypotheses were tested individually using the entire sample.

Table-1 : Result of Test of Hypothesis

Hypothesis on	Factor	Test Statistics			Test Result
		Division	Mean	SD	
1-3. Job satisfaction	Gender	Male (N=32)	27.73	8.69	Rejected
		Female (N=18)	31.20	3.30	
	Age	<37 (N=12)	28.68	6.15	Rejected
		38-47 (N=20)	26.11	8.67	
		>48 (N=18)	33.00	6.94	
	Experience	0-10 (N=22)	26.15	7.56	Accepted
		11-20 (N=16)	28.50	6.36	
		>20 (N=12)	35.00	5.39	
4. Routineness	Gender	Male (N=32)	120	21.37	Rejected
		Female (N=18)	128	18.38	
5. Job Satisfaction and Routineness		$r = 0.56$			Accepted

7. Conclusion

In our study we have found that there is significant difference of job satisfaction between male and female employees. The younger group of library employee is more satisfied compared to the middle aged group. The elder group is very much satisfied. The less experienced group displayed the lowest satisfaction and the most experienced group is highly satisfied. It is proven that there is significant difference of personality trait between male and female employees. Personality traits and job satisfaction are positively correlated with each other. There is significant difference of routineness between male and female employees. Job satisfaction and routineness are positively correlated with each other.

In developed countries there are various kinds of jobs and scope to get a desirable job. The working environments, facilities and motivations are also much better than the developing or under developed countries. That's why the less satisfied or not satisfied employees who have poor working conditions dare to leave their job with their level of job satisfaction as they are confident about getting another available jobs according to their likeness. But in countries like India and other developing countries the opportunity and scope of getting new jobs are very less. Getting a chance to serve an organization with poor working conditions is also considered a golden opportunity here as these countries are suffering from non employment problem. There are lack of opportunity to get a job according to one's likeness. So the less satisfied even not at all satisfied employees have to stick with their unsatisfied job and poor working conditions.

To maintain a good relationship with the co-workers, service provider and all of those who are related to one's job is correlated with the person's job satisfaction. Regarding this situation a library employee has a wider area of service providers like students, researchers, professors, and also with their colleagues. That's why a library employee should have posses a good personality, which is correlated with job satisfaction. The satisfied employees guarantee a good and quality service. The good and acceptable working condition increases the level of satisfaction of an employee. An employee is ready to work hard and harder if he/she is very much comfortable with the conditions under which he/she works. Therefore, in the course of recruitment and during the in service period personality possession as well as personality improvement and working conditions should be taken into consideration.

References

1. Lynch, Beverly P. and Verdin, Jo. Ann. (1987). Job Satisfaction in Librarians: Relationships of the work itself, age sex, occupational group, tenure, supervisory level, career compliment, and Library department. *Library Quarterly*, 53, 434-477.
2. Lynch, Beverly P. and Verdin, Jo. Ann. (1983). Job Satisfaction In Librarians: A Replication. *Library Quarterly*, 57, 190-202.
3. Stead, Bette Ann and Scamell, Richard W. (1981) A note on the contribution of assertiveness training to job satisfaction of professional librarians. *Library Quarterly*, 51,380-389.

4. Stead, Bette Ann and Scamell, Richard W. (1980). A Study of the Relationship of Role Conflict, the Need for Role Clarity, and Job Satisfaction for Professional Librarians. *Library Quarterly*, 50,310-323.
5. D'Elia, George P. (1979). The determinants of Job Satisfaction among beginning librarians. *Library Quarterly*, 49, 283-302.
6. Plate, K.H., & Stone, E.W. (1974). Factors affecting librarians' job satisfaction: a report of two studies. *The Library Quarterly*, 97-110.
7. *Op. Cit.* 5.
8. Vaughn, William J., Dunn, J.D. (1974). A study of job satisfaction in Six University Libraries. *College & Research Libraries*, 35, 163-177.

ACCESS TO NEWSPAPER INFORMATION IN WEB: REVIEW OF LITERATURE

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Abstract: Web based newspaper information retrieval systems are effective in searching and retrieval. Tries to comprehend the characteristic features of such retrieval systems based on evidences of previous researches. Designers of newspaper Information retrieval systems may get proper directions from the observations of this study.

Keywords: Newspaper IR In Web, Searching of Newspaper Information in Web, Evaluation of Web based Newspaper IR Systems

1. Introduction

Several web based archiving initiatives for newspaper items are available now. No doubt, these online systems are far better, in meeting users' demands, than their printed and manual counterparts. Still these are functioning with many lacunas. Moreover, these are not up to the mark in view of the state-of-art ICT and the latest trends and developments in information storage and retrieval procedure.

The situation, therefore, has created a strong demand upon the information specialists towards designing an efficient and effective newspaper information retrieval system. Keeping this in view, an attempt has been made, here, to comprehend the characteristic features of existing web based newspaper information retrieval system through a critical study and analysis of previous researches on the area.

2. Objective

The objective of this study is to present an in-depth review of existing literature related to the previous researches on web based newspaper information retrieval systems. To be precise, this review makes an endeavour:

- I) to locate lacunae or gaps in the development of the area;
- II) to identify aspects and facets that have either not been treated or treated insufficiently;
- III) to uncover methodologies that have already been used successfully by other researchers in the area;
- IV) to get new idea or approach on this area of investigation; and
- V) to develop a firmer understanding of the theoretical implications on this area of research.

3. Newspaper Information In Web

The role of the digital library as a contributor to the news process in the electronic environment has come into sharper focus. CHEPESIUK describes how electronic library systems and access to the Internet and commercial

databases have brought dramatic changes to newspaper libraries and to news librarians' jobs. Library electronic newspaper clipping system incorporating indicative abstract has been developed at the Nanyang Technological University, Singapore (HUI & GOH). Different abstract generation techniques have been studied and evaluated and finally incorporated into the retrieval interface, including the location method, indicative phrases, the title keyword method, and keyword frequency. Readers can use web browser to retrieve news articles. The users are facilitated as the dynamic abstracts are generated to filter out irrelevant news articles, without having to review the whole article. Though, one may raise question regarding judgement of this irrelevance. The result showed that the title keyword and location methods produced the highest relevance among the abstracting techniques. Another electronic library initiative EL-NET (TATEWAKI) claims that it provides the largest image database in Japan, covering 42 newspapers and 120 leading magazines. Articles can be searched, then can be sent via fax or e-mail. In a study covering 105 metropolitan daily newspapers (HANSEN & WARD) of US having circulations of 1,00,000 plus, it is found that 67% of newspapers have an electronic library and 90% have commercial database subscriptions. Implications of this for public access to the news content of local paper have been discussed.

Web based online retrieval systems for capturing of newspaper information are growing presently in Internet environment. LIST has described the use of news links and multiple communication channels in web page design by the Internet newspapers. Asserts that this has created a new environment of communication, involving more than host newspaper and initial audience. A significant effort in this direction has been done by MATORIA ET AL. Considering the need of newspaper information for study and research, they have designed and developed NewsNic, a web based full text newspaper information retrieval system at NIC Library, India. Describe, in detail, the various aspects of the system architecture and configuration. BANATRE ET AL. give an overview of the ETEL—a newspaper based distributed information system that provides quality information service in web environment. The system guarantees relevant retrieval and ensures responsiveness through the provision of dedicated system policies. MAITY & MAITY have designed and developed a prototype web based retrieval system for letters to editor of newspapers, called LENET, using HTML. The system is based on the principle of citation index. Discuss in detail, the methodology and achievements. KLEINER, in this regard, gives a description of Search Helper—an online retrieval system installed at the Louisiana State University. The system offers access, via DIALOG, to some databases of Information Access Company. Analysis of the system during the free trial period indicates user status, area of study and subjects searched by the users. An investigation on the present state and the future of the British newspapers on the web, has been made by COWEN. Reveals that there is no clear strategy for the future of the newspapers on the web. However, feels that the newspapers should concentrate on targeting local audience, facilitating community publishing and investigating in research. ERDELEZ & RIOUX have made a study on the

design and functional features of sharing tools on a sample of some United States newspaper web sites. Findings suggest that on the sample web sites, there is a lack of standardisation in the visual design and placement of sharing tools. There is also insufficient user guide, and information about security and privacy is absent or incomplete. Besides, many tools can not be customised, and are not convenient to use. Apart from the above, some other attempts have also been found to throw light on online retrieval of newspaper information (JOSEPH (1991a); KATNY; RHYDWEN; ROTHMAN; SMITH(1995); STEEMSON (1990, 1994); NICHOLAS ET AL., 1999).

The advancement of ICT and the user's growing demand for information from digital sources have created urge for design and development of databases. Digitisation is also necessary for preservation of information materials for historical purposes. As regards preservation of newspapers, many attempts have come to our notice, although they vary in terms of their organisational procedure and retrieval functions. HAWTHORNE describes the Kentucky Newspaper Bibliographic Control Project (KNBCP) which is part of the US Newspaper Programme, devised as a vehicle to locate, identify and eventually preserve newspapers to facilitate research use of newspapers. States the plans to enter information into the database. Conversion of Serials (CONSER)—an union list of Kentucky newspapers. JACSO discusses about an index database, Microcomputer Index, intended for use by the practitioners who may be satisfied with finding references to magazines and newspapers. It provides informative citations to publications of the popular and technical press. Critically reviews the scope, subject and source coverage, currency, indexing policy and searchability of the database. An attempt made by KRUMENAKER has tried to determine the coverage of the top 100 US newspapers online by the major hosts (DIALOG/DIALOG Web, NEXIS, NewsLibrary, InfoTrace Web, ProQuest, Factiva) and whether the newspaper has its own web archive. The analysis also provides data relating to the newspaper's currency online and cost per article. ENGLAND has made an effort to discuss about two locally produced databases at North Dakota University Library which are accessible via world wide web using a cost effective but highly functional search engine created in-house. The technology consists of a microcomputer running UNIX to serve relational databases. A survey, made by MILSTEAD, on some online databases has tried to discover how each uses vocabulary management to make cross file or multiple database searching easier. Concludes that the use of machine aided indexing (MAI) or automatic indexing can have a major impact on cross file vocabulary management since these technologies can generate algorithms for assignment of terms from a controlled vocabulary to processed text. INGEBRETSEN, in this regard, describes the scope, coverage and indexing of the Los Angeles Times database and details how it is transmitted, loaded and searched on the online services. Whereas, GONZALEZ ET AL. have focused on web based newspaper's pagination problem in optimizing the layout of a set of articles extracted from several web newspapers and sending it to the user as a result of a previous query. Present an improved approach based on simulated

annealing (SA) that solves the problem online. Another notable work done by MANDELBAUM has tried to review the features and searching facilities available on NewsLibrary, the web based full text newspaper database version of VU/TEXT. Finds that, despite some minor shortcomings, NewsLibrary is an excellent source of aggregated newspaper archives and allows precise searching that delivers targeted results.

In addition to the above efforts, some studies have tried to pay attention on user oriented information retrieval. DIAZ ET AL., in this context, present a news application for retrieval of information that allows readers of newspapers to receive a electronic mail message containing the news items that the system finds particularly relevant to the interests of the users. Outline the specific characteristics distinguishing such systems from more general systems and discuss their effect. Conclusions cover the nature of information handling tasks that the digital news services are faced with and the risks of careless application of recall and precision measures in such systems. BLAKE (1997), in this regard, discusses Reuters News Explorer and its search engine—Muscat, a personalized alerting service that provides customised news to individuals on Internet. Free text searching by natural language ranks the relevance of retrieved documents using a combination of probabilistic retrieval algorithms and statistical techniques. Muscat retains Boolean capabilities. Besides, KAMBA ET AL. describe a personalised newspaper on the web, called ANATAGONOMY. The system monitors user operations on the articles and reflects them in the user profiles. It sends an interactive agent implemented as a Java applet to the client side, and the agent monitors the user operations and creates user's newspaper page automatically. Find that automatic personalisation works may be well when some stipulated parameters, as prescribed by the study, are set properly.

Besides the above, an important aspect of computerised information retrieval systems is domain independence, where the subject is restricted to certain domains of knowledge. This should be able to represent any topic and although the text representation does not involve any semantic knowledge, lexical and syntactic analysis of the text allows the representation to remain domain independent. In this context, O'DONNELL & SMEATON have reported on a research that concentrates on the lexical and syntactic levels of natural language analysis. Also describe a domain independent automatic information retrieval system which accesses a very large database of newspaper text from the Wall Street Journal. The system represents the text in the form of syntax trees, and these trees are used in matching process. In another attempt CABO & LLAVORI focus on modelling the structure and temporal properties of newspapers. The resulting data model is object oriented and uses metaclasses to cope with all the requirements of the application. The proposed system is then completed with both a document definition language and a temporal document retrieval language. The former allows the user to declare all the features supported by the data model. For the later, outline some query-processing strategies.

4. Searching and Retrieval in Web

Searching is the process of locating documents and items of information that have been committed to store. In searching, a searcher describes his/her subject of interest in concise terms, which he/she regards as headings likely to be found in an Index (ROWLEY). After evaluating the indexing of a sample according to subject heading methods used in Library Literature, Library and Information Science Abstracts, PRECIS, and coordinate Indexing (Termatrix, a thesaurus developed for indexing and searching), BURGER & STINNES have found coordinate indexing, Termatrix to be most useful for retrieval purposes. A comparison of PRECIS and KWIC indexes to newspaper articles made by MADELUNG shows that the PRECIS Index has both better recall and greater precision. Furthermore the users find more confidence in their judgment of the relevance of retrieved articles in the PRECIS index than in the KWIC index. KAVANAGH makes a comparison of computerized information retrieval systems and manually prepared card index systems and concludes that in computerized system users are able to retrieve more information in far less time than in card index. Study made by MISCHO indicates that computer produced index in KWOC format, is cost competitive and provides a more effective retrieval system than card file system. A feasibility study to investigate the viability of producing an index to newspapers has been done by HINDSLEY, the result of which would be used for database development and on-line information retrieval practices. JAAFAR & JAAFAR describe MALMARC project and STEEMSON (1990) discusses OPAL system which offer on-line access to databases. ROERTVEIT discusses experience with AVISINFORM project from which newspaper information will be available on-line through field searching. GRASSIAN & ZWEMER provide an overview of databases to which the MELVYL system provides access. Discuss effective search strategies and outlines users reactions after one year of use. DANKY discusses experiences with OCLC that provides access to bibliographic records responding the user and librarian demands. The OCLC holds much promise for the library profession, especially in terms of subject access. ROSS and MILSTEAD discuss on the features of cross file searching in an online environment. SOVNER-RIBBLER describes cross-file searching in the Information Access Company (IAC) databases which contain information to support research in the areas of business and industry, current affairs, consumer interests and the law. WEST provides an on-line user's guide to Information Access Company (IAC) databases. BLAKE (1994) makes a discussion on UMI Document Delivery System through which users will be able to search UMI abstracts and index databases, either on-line or locally. FARQUHAR illustrates experiences with Data Times which offers on-line full text retrieval facility from databases of newspaper items. PACK briefly notes the on-line databases that may be used to search for the kind of short stories in newspapers. PURCELL describes searching the News Bank Electronic Index, a newspaper index stored on CD-ROM. CD-ROM newspaper databases have advantages over their printed and on-line equivalents where searches can be quicker, and more thorough results

can be printed, and the user has unlimited access at fixed costs (JAFFURS). PETERS discusses the advantages of CD-ROM and different searching methods, with and without mediator. Examines special features, such as those aid end user searching. A study of users adaptation in an interactive database search system, conducted by MEADOW, concludes that index language should be designed to suit the recognizable classes of users, rather than users as a whole. A significant attempt done by O'DONNELL & SMEATON on domain independent automatic information retrieval provides an exceptional approach in this direction. Another notable work has been presented by OCLC that provides browser based user friendly access and searching options to retrospective newspaper collection. TENOPIR and HOGAN mention some databases that provide on-line access to newspapers in their complete text or to indexes or abstracts. GARFIELD compares the use of the Internet for selective dissemination of information (SDI) by comparing web searches via Alta Vista with similar searches on CD-ROM. Besides, many studies have attempted to throw light on searching strategies and features of searching in various web sites providing newspaper information (DIAZ ET AL.; BLAKEMAN; KLUGKIST; PAUL (1996a, 1996b); YEONG; KRUMENAKER & HURST). As to the functions of the search engines in searching and retrieval of information in web environment, GARCIA & GONZALEZ have made a qualitative analysis of some search engines. Some other studies have also attempted to comprehend the features of search engines in searching and retrieval of newspaper information (BLAKE (1996, 1997); BRADLEY; WEBBER).

5. Evaluation of Web based Systems

Several attempts have been made to assess the performance of computerized information retrieval systems. KRUMENAKER analyzes a set of 10 US newspapers to determine the extent of their coverage online by the major hosts (DIALOG/DIALOG Web, Nexis, NewsLibrary, InfoTrace, ProQuest, Factiva). The analysis also provides data relating to the newspaper's currency online and the cost per article. MORRISON (1986) presents a comparative analysis of the two main indexes to The Times newspaper—Palmer's Index to The Times newspaper; and The Times Index. They are evaluated according to selected criteria of good indexing such as consistency, concept versus keyword approach and the use of subject headings, and cross references. Results indicate the superiority of The Times Index and the problems to be encountered in searching Palmer's Index. MORRISON (1987) further makes an evaluation and comparative analysis of the above mentioned indexes of the same newspaper based on same criteria, applied in the earlier study made by him. But Morrison used two methods of approach distinct from the earlier evaluation of which 1st one is to read a portion of the newspaper and to summarise under what headings it has been indexed. The 2nd is to take index entries at random and see how well they match the subject matter. The findings of the present study substantiate the findings of the earlier study. FOSTER evaluates in detail the monthly Index to The Financial Times on the basis of some selected criteria such as scope, arrangement, indexing methods, timeliness and price. Study

made by GILZINGER reveals the problems encountered in producing a newspaper index. It also indicates that producing an index via on-line system is less time consuming compared with batch system. OJALA makes an evaluation of newspaper databases comparing some newspaper indexing and abstracting services. ROSS makes a study of some computerized and online newspaper information retrieval systems and notes their unique and special characteristics. Evaluation of some on-line news information databases made by HOGAN points out special features of the same. Evaluation of another on-line information retrieval system, SEARCH HELPER, which offers access to many databases, reveals that on-line searching is the best way to satisfy individual information needs (ONLINE). KNEE (1984) examines the capabilities of the UNIVAC 110/82 text editor for generating a local newspaper index. Finds the problems of the system in generating index. Suggests that this text editor should not be used for large indexes. Although, it can be used for smaller indexes. A study has already been conducted in order to observe and measure the user's adaptation in an interactive data base search system by MEADOW. User performance appears to be a function of how well suited the language is to the user and the problem being addressed, rather than either language complexity or user experience. A major conclusion is that index language should be designed to suit recognizable classes of users, rather than all users as a whole. GARFIELD compares the use of Internet for selective dissemination of information (SDI) by comparing web searches via Alta Vista with similar searches on CD-ROM. Predicts that future current awareness services and selective dissemination of information services will be linked to electronic periodicals in electronic libraries. TENOPIR makes a study of some online databases which offer access to newspaper information. The study asserts that some choice should be made in selecting on-line newspapers or databases. Suggests that current information about any database must come from the database producer or on-line vendor. PETERS also suggests the librarians to make careful considerations when purchasing CD-ROM databases. Makes a comparative analysis of databases available on CD-ROM, print and on-line versions and finds that CD-ROM databases offer better searching facility than the others. JAFFURS evaluates some CD-ROM products with details of coverage, costs, system requirements and searching; and finds that CD-ROM newspaper databases have advantages over printed and on-line versions: more timely indexing, searches can be quicker, more thorough results can be printed, and the user gets unlimited access at fixed cost.

KEKALAINEN & JARVELIN propose evaluation methods based on the use of non-dichotomous relevance judgements in IR experiments. The proposed methods are: a novel application of P-R curves and average precision computations based on separate recall bases for documents of different degrees of relevance; and generalised recall and precision, based directly on multiple grade relevance assessments. Demonstrate the use of the traditional and the novel evaluation measures in a case study on the effectiveness of query types, based on combination of query structures and expansion, in retrieving documents

of various degrees of relevance. SHEPHERD ET AL. have reported a study on the role of user profiles for news filtering, through evaluation of user preference for personnel editions. The results indicate that the users prefer the coarse grained community filters to fine grained personalized filters. DIAZ ET AL. present an evaluation of system performance and user satisfaction of the Mercurio System, that allows newspaper readers to receive a periodic electronic mail message containing news items that the system finds particularly relevant to the interests of the users, as previously defined during registration. Conclusions cover the nature of the information handling tasks that the digital news services are faced with, the relative merits of sections, categories and keywords with respect to this particular set of tasks, and the risks of careless application of recall and precision measures in such systems. COWEN investigates the present state and the future of British newspapers on the world wide web through an evaluation of the five British broadsheet web sites and interviews with journalists, information specialists and news media professionals. Results show that there is no clear strategy for the future of newspaper on the web. Suggests that the newspapers should concentrate on targeting local audience facilitating community publishing and investigating research. NICHOLAS ET AL. (2000) describe a piece of research conducted on The Times/ The Sunday Times web site to determine the most appropriate methods for evaluating use and to establish what forms of analysis could be best derived. In another attempt, NICHOLAS ET AL. (1999) have described testing methods to determine the use of web sites for newspaper information retrieval. Discuss the findings and make suggestions in this regard. NEILSON & WILLETT have discussed the ways in which regional newspapers in the UK have reacted to the challenges posed by the Internet. A detailed evaluation of the web sites for 25 regional newspapers demonstrated clear audience trends and a certain consensus of styles and features. CREE & LEELS have presented a comparative evaluation of UK newspapers in different electronic formats based on an examination of Internet sites, FT Profile Guide and Microinfo Electronic Media Directory. Conclude that a combination of Internet and FT Profile would seem to provide the best value for money, the most user friendly information retrieval and the biggest pool of data from which to draw. BLAKEMAN reviews the autonomy intelligent search agent for the Internet. The evaluation indicates that autonomy is not suited to adhoc one-off searches as it takes too long compared to more traditional search engines. NICHOLAS (1996) evaluates electronic news papers in terms of: methods of access, financial arrangements, presentation, timeliness/currency, length of archive, content, interactivity, organisation/ navigation/associations and links. Provides findings and suggestions in this regard. Apart from the above, GARCIA & GONZALEZ have presented a qualitative analysis of the search engines using the information retrieval evaluation model and a qualitative analysis, examining aspects such as user friendliness. Draw the findings in detail and make some recommendations.

10. Conclusion

An in-depth study and critical analysis of the observations, revealed through

the previous researches concerned with the problem/area of this research, brings out a number of notable findings that may come to help in reaching our target. Particularly in India, very few attempts have been found to deal with web based retrieval of newspaper information. On the other hand, the global phenomenon is just opposite to this, wherefrom a large number of papers have come out on this area. However, designing of a retrieval system based on a sound theory and methodology that urges to employ a strategy covering a systematic and comprehensive study of source literature (i.e. the materials that are to be included in the system), newspaper information users, and the performance of the existing retrieval systems is quite rare. It has also helped to locate gaps and lacunae, identify unexplored facets in the area of research, and to know the state-of-the-art methods and technologies available and implemented throughout the world in this direction. Finally, this literature search may make it possible to build a proper plan on this area of investigation and lead to develop a firmer understanding and comprehension of the theoretical implications of this research area.

References

- BANATRE, M. ET AL. (1997). Providing Quality of Service over the Web: A Newspaper Based Approach. *Computer Networks and ISDN Systems*. 1997 September; 29 (8): 1457-1465.
- BLAKE, P. (1994). UMI Provides Food for Thought. *Monitor*. 1994 July; (161): 2-3.
- BLAKE, P. (1996). Web Newspaper Launch Tactics Vary. *Monitor*. 1996 February: 8-10.
- BLAKE, P. (1997). Exploring the News. *Information World Review*. 1997 January; (121): 17-18.
- BLAKEMAN, K. (1997). Intelligent Agents: Search Tools for the Future. *Business Information Searcher*. 1997 Winter; 7(1): 16-18.
- BRADLEY, P. (1998). Intelligent Agents. *Records Management Bulletin*. 1998 October; (88): 15-16, 21-22.
- BURGER, MARLEWE; STINNES, HEIDI. (1984). Index to South African Literature on Library and Information Science. *South African Journal of Library and Information Science*. 1984 July; 52(2): 70-73.
- CABO, M.J.A.; LLAVORI, R. B. (1997). An Approach to a Digital Library of Newspapers. *Information Processing and Management*. 1997 September; 33(5): 645-661.
- CHEPESIUK, R. (1996). The Electronic News Library: An Online Revolution takes Shape. *American Libraries*. 1996 October; 27 (9): 48-50.
- COWEN, N. (2001). The Future of British Broadsheet Newspaper on the World Wide Web. *Aslib Proceedings*. 2001 May; 53 (5): 189-200.
- CREE, J.S.; LEES, M. (1998). Keep up with Yesterday's News. *Library Technology*. 1998 June; 3 (3): 48-49.
- DANKY, JAMES P. (1986). Newspapers and their Readers: The United States Newspaper Program's List of Intended Audience Terms. *Cataloging and Classification Quarterly*. 1986 Summer; 6(4): 85-106.
- DIAZ, A. ET AL. (2001). Sections, Categories and Keywords as Interest Specification Tools-for Personalised News Services. *Online Information Review*. 2001; 25 (3): 149-159.

- ENGLAND, M. ET AL. (2000). A Low Cost Library Database Solution. *Information Technology and Libraries*. 2000 March; 19(1): 46-49.
- ERDELEZ, S.; RIOUX, K. (2000). Sharing Tools on Newspaper Web Sites: An Exploratory Study. *Online Information Review*. 2000; 24 (3): 218-228.
- FARQUHAR, BOB. (1983). Newspaper Library Goes Online. *Journal of Information and Image Management*. 1983 December; 16(12): 20-21.
- FOSTER, PAMELA. (1984). Monthly Index to the Financial Times: How Good Is it. *Business Information Review*. 1984 October; 1(2): 3-7.
- GARCIA, J.C.; GONZALEZ, J.L. (2001). Quantitative Evaluation of the IR Systems of Online Journals in the Internet: Exhaustivity and Precision. 2001 January-June; 7 (1): 143-152.
- GARFIELD, E. (1996). Agony and Ecstasy of the Internet : Experiences of an Information Scientist. In : Helal, Ahmed H; Weiss, Joachim W., eds. *Towards a Worldwide Library: A Ten Year Forecast: Proceedings of the 19th International Essen Symposium*; 1996 September 23-26; Essen, Germany. Essen, Germany: Universitätsbibliothek Essen; 1997. 202-222.
- GILZINGER, DONALD. (1984). Creation of an In-house Newspaper Index. *Community & Junior College Libraries*. 1984 Spring; 2(3): 9-13.
- GONZALEZ, J. ET AL. (2001). Optimization of Web Newspaper Layout in Real Time. *Computer Networks*. 2001 July; 36 (2-3): 311-321.
- GRASSIAN, E.; ZWEMER, D. (1993). Intuitive, Adoptable, Convenient: MAGS, NEWS and COMP. *DLA Bulletin*. 1993; 12(3): 6-10.
- HANSEN, KATHLEEN A.; WARD, JEAN. (1991). Information Technology Changes In Large Newspaper Libraries. *Special Libraries*. 1991 Fall; 82 (4): 267-273.
- HAWTHORNE, PAT. (1985). The Kentucky Newspaper Project. *Kentucky Review*. 1985; 5 (3): 60-64.
- HINDSLEY, GAIL-MARIE. (1987-1988). Newspaper Indexing Feasibility Project. Melbourne, Australia: Royal Melbourne Institute of Technology, Department of Information Services, GPO Box 2476V, Melbourne, Victoria 3001, Australia; 1987-1988.
- HOGAN, THOMAS H. (1979). News Retrieval Services Growing but where are they Headed. *Online Review*. 1979 September; 3(3): 247-252.
- HUI, S.C.; GOH, A. (1996). Incorporating Abstract Generation into an Online Retrieval Interface for a Library Newspaper Cutting System. 1996 November-December; 48 (11-12): 259-265.
- INGEBRETSEN, DOROTHY L. (1991). The Los Angeles Times: A Special Kind of Database. *Database Searcher*. 1991 May; 7 (4): 17-30.
- JAAFAR, SHAHAR BANUN; JAAFAR, S. BANUN. (1989). Applications of Microcomputers in Malaysian Libraries with Emphasis on Its Applications at the National Library of Malaysia. In: Chen, Ching-Chih; Raitt, David I., eds. *Proceedings of the 2nd Pacific Conference on New Information Technology for Library & Information Professionals, Educational Media Specialists and Technologists*; 1989 May 29-31; Singapore. Singapore: MicroUse Information and FID; 1989.173-187.
- JACSO, PETER. (1986). Microcomputer Index: A Micro Evaluation. In: Williams, Martha E.; Hogan, Thomas H., eds. *National Online Meeting 1986: Proceedings of the 7th National Online Meeting*; 1986 May 6-8; New York. Medford, New Jersey: Learned Information, Inc.; 1986. 211-222.

- JAFFURS, ALEXA. (1989). Newspapers on CD-ROM: Timely Access to Current Events. *Laserdisk Professional*. 1989 May; 2(3): 19-28.
- JOSEPH, ROSAMMA. (1991a). Information Network In Newspapers In India. *ILA Bulletin*. 1991; 27(2): 58-62.
- KAMBA, T. ET AL. (1997). ANATOGONOMY: A Personalized Newspaper on the World Wide Web. *International Journal of Human-Computer Studies*. 1997 June; 46 (6): 789-803.
- KATNY, M. (1994). Newspaper Cutting and Online Information System at the BBC World Service Information Research Unit. *Library and Information Research News*. 1994; 18(59): 6-10.
- KAVANAGH, ROSEMARY. (1977). The Filtration that Is Paying Off. *Jamaica Library Association Bulletin*. 1977: 39-41.
- KEKALAINEN, J.; JARVELIN, K. (2002). Using Graded Relevance Assessments in IR Evaluation. *Journal of the American Society for Information Science and Technology*. 2002; 53 (13): 1120-1129.
- KLEINER, JANE P. (1985). Users Searching: A Public Access Approach to Search Helper. *RQ*. 1985 Summer; 24 (4): 442-451.
- KLUGKIST, A.C. (1998). ELDORADOC: The Digital Library of the University of Groningen and the WebDOC Project. *Biblioteche Oggi*. 1998 January-February; 16 (1): 10-16.
- KNEE, MICHAEL. (1984). An Evaluation of the UNIVAC 1100/82 Text Editor as an Alternative World Processor for Generating a Newspaper Index. *Information Services and Use*. 1984 April; 4 (1-2): 31-36.
- KRUMENAKER, LARRY. (2003). Tribunes and Tribulation: The Top 100 Newspaper Archives (or Lack thereof). *Searcher*. 2003 July; 11 (7): 28-35.
- KRUMENAKER, LARRY.; HURST, J.A. (2000). 'Check' Em All: The Mathematics of Online Newspapers. *Searcher*. 2000 May; 8 (5): 38-47.
- LIST, RONALD ET AL. (1978). New Applications of Permutational Indices. *Informatika*. 1978; 25(6): 28-31.
- MADELUNG, HANS-OLE. (1982). Subject Indexing in the Social Sciences: A Comparison of PRECIS and KWIC Indexes to Newspaper Articles. *Journal of Librarianship*. 1982 January; 14(1): 45-58.
- MAITY, N.C.; MAITY, G. (2001). Designing Newspaper Information Retrieval System using HTML: A Case Study with "Letters to Editor". *Vidyasagar University Journal of Library and Information Science*. 2001; 6: 70-90.
- MANDELBAUM, J. (2000). NewsLibrary: VU/TEXT Reincarnated. *EContent*. 2000 June-July; 23 (3): 31-34.
- MATORIA, R.K. ET AL. (2003). NewsNlc: A Web-Based Full-Text News Clipping Service from the National Informatics Centre Library In India. *Program*. 2003; 37(3): 181-189.
- MEADOW, CHARLES T. (1983). User Adaptation in Interactive Information Retrieval. *Journal of the American Society for Information Science*. 1983 July; 34(4): 289-291.
- MILSTEAD, J.L. (1999). Cross File Searching: How Vendors Help and don't Help—Improve Compatibility. *Searcher*. 1999 May; 7 (5): 44-55.
- MISHO, WILLIAM H. (1997). A Computer Produced Newspaper Index. *Journal of Library Automation*. 1997 March; 10(1): 41-52.
- MORRISON, DOREN. (1986). Index to the Times. *Journal of Documentation*. 1986 September; 42(3):189-195.

- MORRISON, DOREN. (1987). Indexes to the Times of London: An Evaluation and Comparative Analysis. *Serials Librarian*. 1987 September; 13(1): 89-106.
- NEILSON, K.; WILLETT, P. (1999). United Kingdom Regional Newspapers on the World Wide Web. *Aslib Proceedings*. 1999 March; 51(3): 78-90.
- NICHOLAS, D. (1996). Really Getting to Grips with the Internet: What it has to offer in the Way of Newspapers. *Vine*. 1996; (104): 29-34.
- NICHOLAS, D. ET AL. (1999). Developing and Testing Methods to Determine the Use of Web Sites: Case Study Newspapers. *Aslib Proceedings*. 1999 May; 51(5): 144-154.
- NICHOLAS, D. ET AL. (2000). Evaluating Consumer Website Logs: A Case Study of The Times/The Sunday Times Website. *Journal of Information Science*. 2000; 26(6): 399-411.
- O'DONNELL, R; SMEATON, A.F. (1993). A Linguistic Approach to Information. *Colorado Libraries*. 1998 Spring; 24 (1): 46.
- OJALA, MARYDEE. (1989). Newspaper Databases: The Abstract and Index Approach. *Online*. 1989 January; 13(1): 90-97.
- ONLINE. (1985). Search Helper: The Queens Borough Experience. *Online*. 1985 November; 9(6): 53-56.
- PACK, THOMAS. (1992). Shortcuts to Finding Short Stories: Searching Fiction Online. *Database*. 1992 February; 15(1): 59-61.
- PAUL, N. (1996a). The Times, They are A-Changing: Newspaper on the Web: Part One—The New York Times on the Web. *Searcher*. 1996 April; 4 (4): 31-38.
- PAUL, N. (1996b). The Times, They are A—Changing: Newspapers on the Web: Part Two—Los Angeles Times on the Web. *Searcher*. 1996 June; 4 (6): 44-48.
- PETERS, CHARLES. (1987). Databases on CD-ROM: Comparative Factors for Purchase. *Electronic Library*. 1987 June; 5(3): 154-160.
- PURCELL, ROYAL. (1987). Compact Disc Stores Newspaper Index. *Small Computers in Libraries*. 1987 May; 7(5): 19-22.
- RHYDWEN, DAVID A. (1977). Computerised Storage and Retrieval of Newspaper Stories at the Globe and Mail Library Toronto, Canada. *Special Libraries*. 1977; 68: 57-61.
- ROERTVEIT, K. (1981). AVISINFORM: Information System for Norwegian Newspapers. *Bok Og Bibliotek*. 1981; 48(4): 266-270.
- ROSS, NINA M. (1981). Newspaper Databases. In: Williams, Martha E.; Hogan, Thomas H., comps. *Proceedings of National Online Meeting*; 1981. Medford, New Jersey: Learned Information, Inc.; 1981. 415-420.
- ROTHMAN, JOHN. (1972). The New York Times Information Bank. *Special Library*. 1972; 63(3): 111-115.
- ROWLEY, J.E. (1985). *Computers for Libraries*. 2nd revised edition. London: Clive Bingley Ltd.; 1985. 73.
- SHEPHERD, M. ET AL. (2001). The Role of User Profiles for News Filtering. *Journal of the American Society for Information Science*. 2001 January; 52(2): 149-160.
- SMITH, G. (1995). Access to Newspaper Collections and Content in a Time of Change. *IFLA Journal*. 1995; 24(4): 282-286.
- SOVNER-RIBBLER, JUDITH. (1988). A Primer on Crossfile Searching in the Information Access Company Databases. *Database*. 1988 February; 11(1): 34-40.
- STEEMSON, MICHAEL. (1990). Fleet Street and the OPAL Library System. *ITs News*. 1990 February; (21): 16-18.

- STEEMSON, MICHAEL. (1994). Direct Electronic Access to Large Clipping Library. *Indexer*. 1994; 19(1): 19-21.
- TATEWAKI, M. (1992). Introduction to an EL-NET Service. *Online Kensaku*. 1992; 13 (4): 194-199.
- TENOPIR, CAROL. (1984). Newspapers Online. *Library Journal*. 1984 March; 109(4): 452-453.
- WEBBER, S. (1998). Search Engines and News Services: Development on the Internet. *Business Information Review*. 1998 December; 15 (4): 229-237.
- WEST, MARTHA W. (1979). Access Information: An Online User's Guide to IAC Data bases. Preliminary edition. Menlo Park, California: Information Access Corporation; 1979. 89p.
- YEONG, L.Y. (1991). Full Text Retrieval for a Newspaper Library. *Asian Libraries*. 1991 March; 1 (1): 50-56.

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